

[illegible]

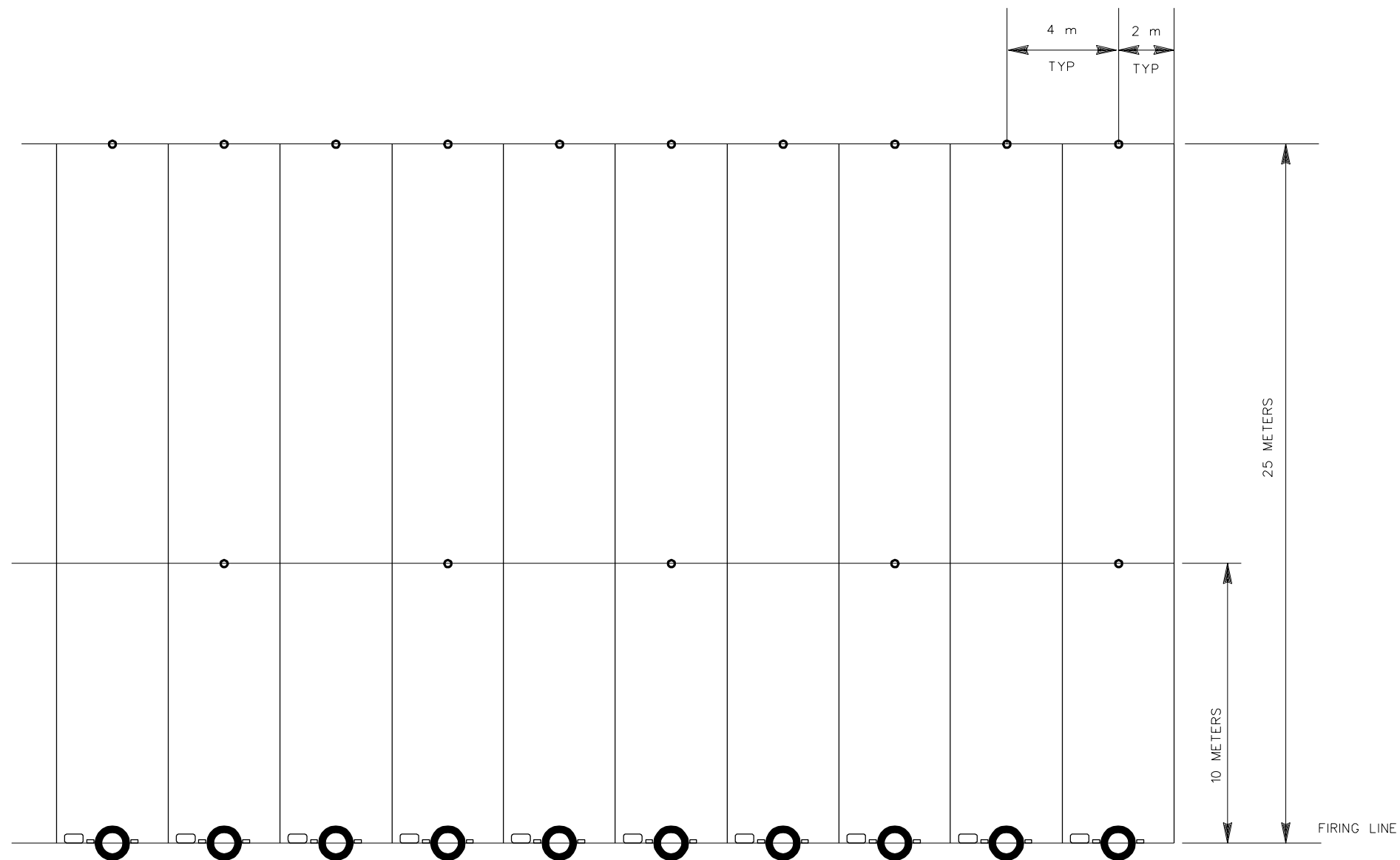
U. S. ARMY ENGINEERING AND SUPPORT CENTER, HUNTSVILLE HUNTSVILLE, ALABAMA	Designed by:		Date:	Rev.
	Drawn by:	Check by:	Design file no.	
	Reviewed by:		Drawing code:	
	Submitted by:		File name:	
			Plot date:	
			Plot scale:	

RANGE AND TRAINING LAND PROGRAM STANDARD DESIGN MANUAL

FCC • 17801
25 M ZERO RANGE

Sheet
reference
number:

Sheet of



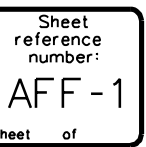
LEGEND

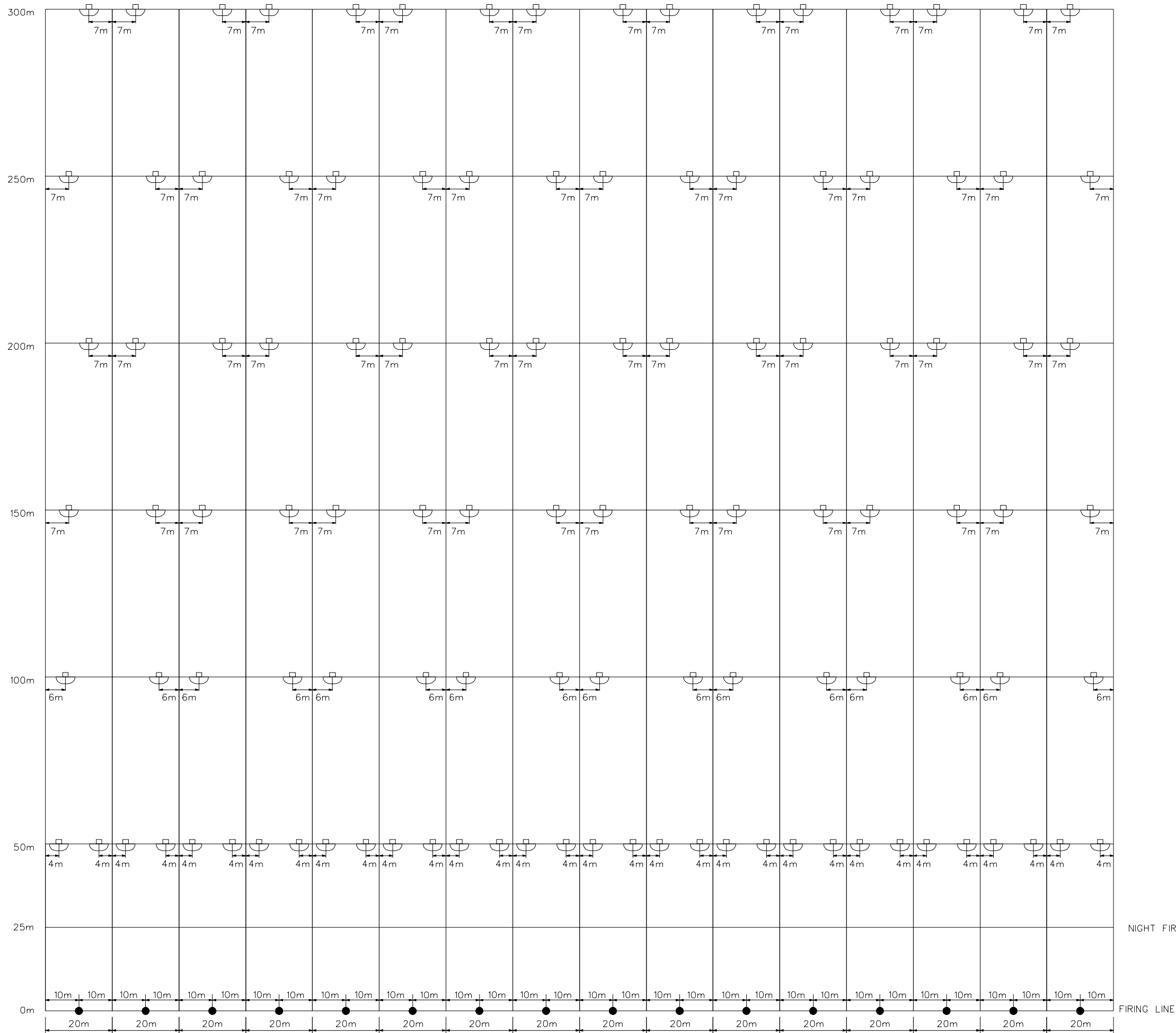


NOTES:

10 LANES SHOWN OF 32 LANE RANGE

FIRING POINT AND TARGET ARE
ON A FLAT PLANE $\pm 1^\circ$





LEGEND

 STATIONARY INFANTRY
TARGET EMPLACEMENT

● FOXHOLE



**US Army Corps
of Engineers**

[illegible]

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	Submitted by:				File name:	
					Plot date:	Plot scale:

RANGE AND TRAINING LAND PROGRAM STANDARD DESIGN MANUAL

FCC • 1/805
AUTOMATED RECORD FIRE RANGE

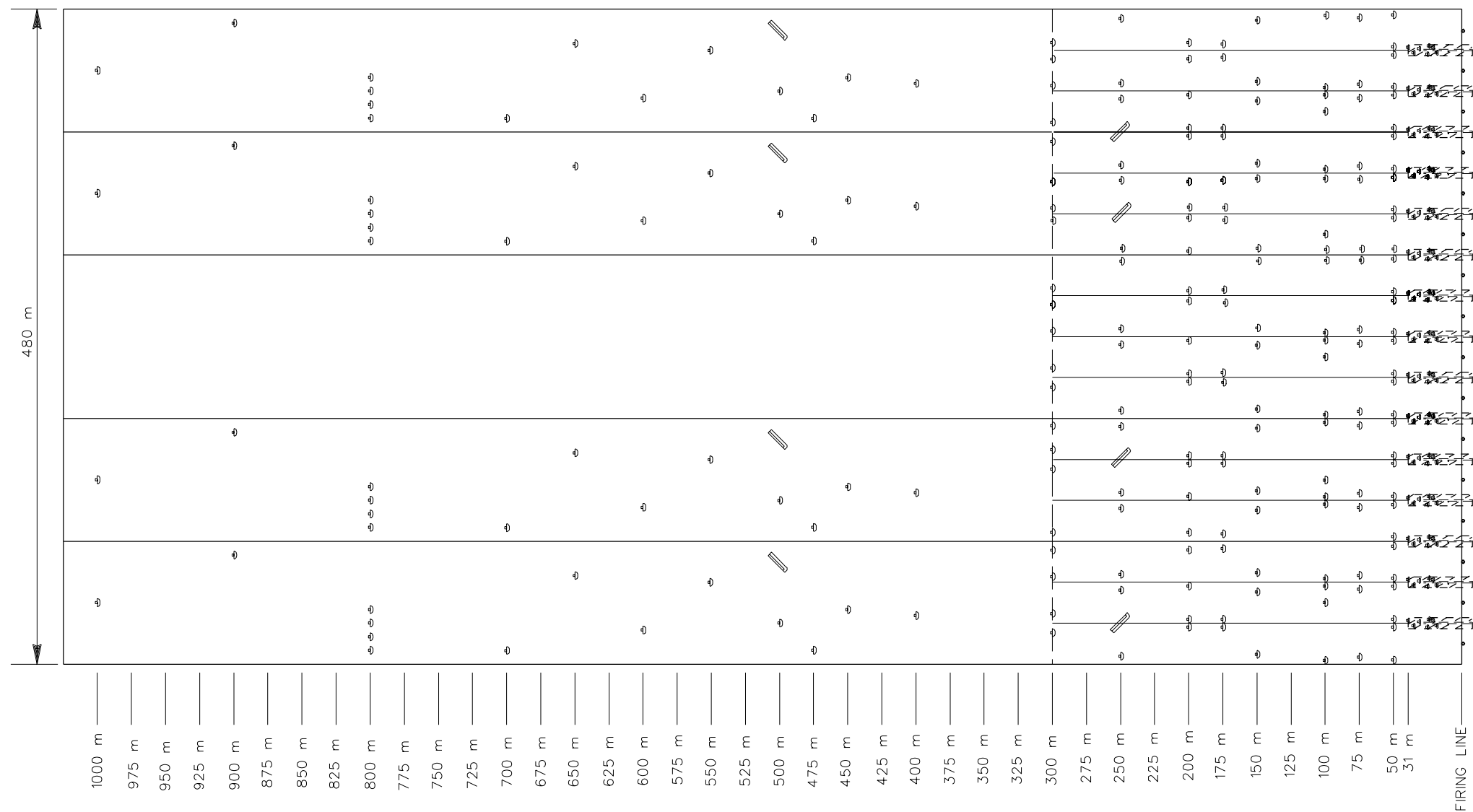
Sheet
reference
number:
ARF - 1

[illegible]

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		Plot scale:		

RANGE AND TRAINING LAND PROGRAM
STANDARD DESIGN MANUAL
FCC • 17809
QUALIFICATION TRAINING RANGE

Sheet
reference
number:
QTR-1
Sheet of



LEGEND:

- ④ SIT (STATIONARY INFANTRY TARGET)
 - ✎ MIT (MOVING INFANTRY TARGET)
 - FOXHOLE
- ~~13~~ ~~4~~ ~~5~~ ~~1~~ SINGLE LANE OF A COMBAT PISTOL
QUALIFICATION COURSE
SEE FCC 17822 FOR LAYOUT INFORMATION

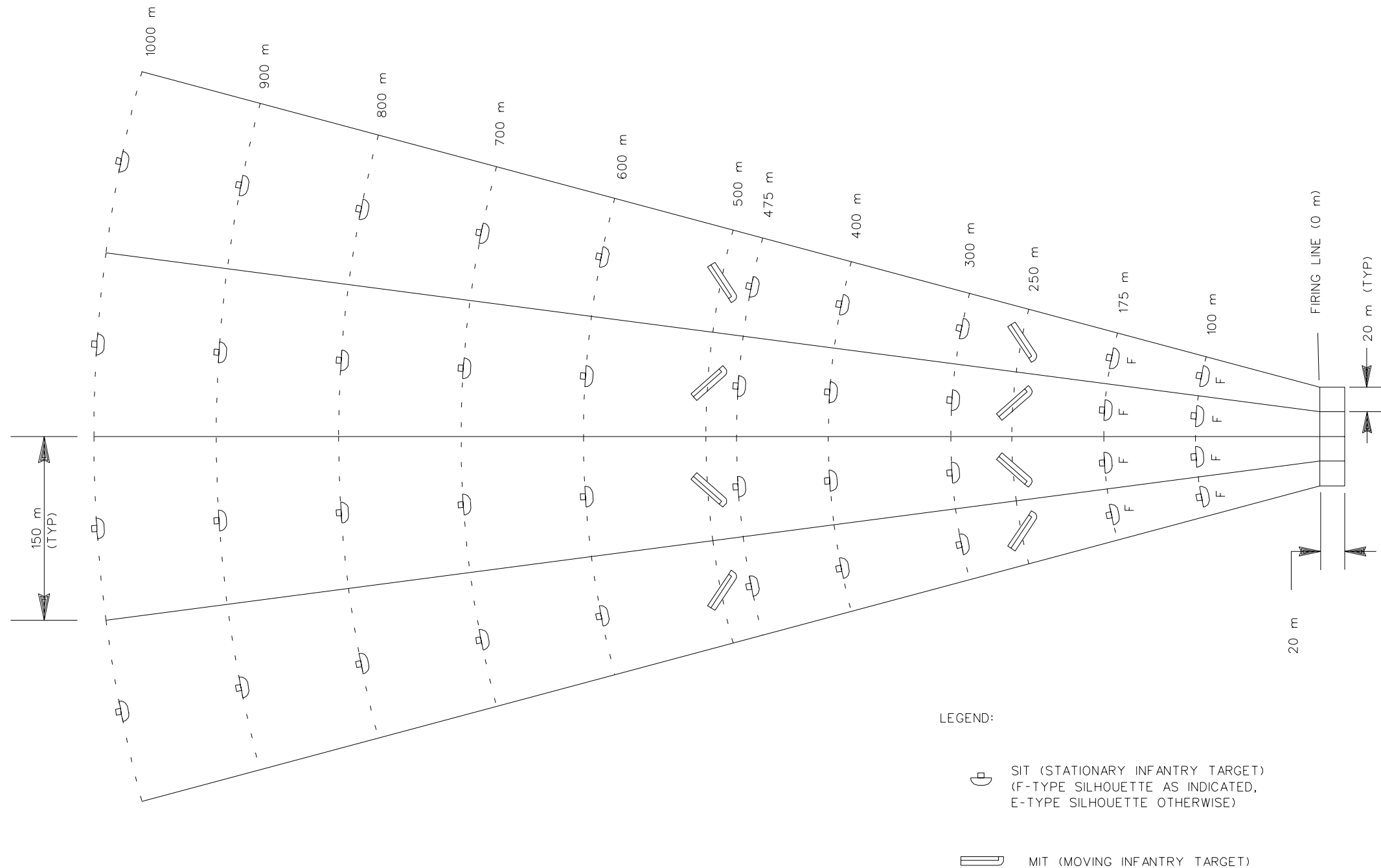
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			Plot date:	
		Plot scale:		

RANGE AND TRAINING LAND PROGRAM STANDARD DESIGN MANUAL

FCC • 17812
SNIPER FIELD FIRE RANGE

Sheet
reference
number:
SFF-1
Sheet of



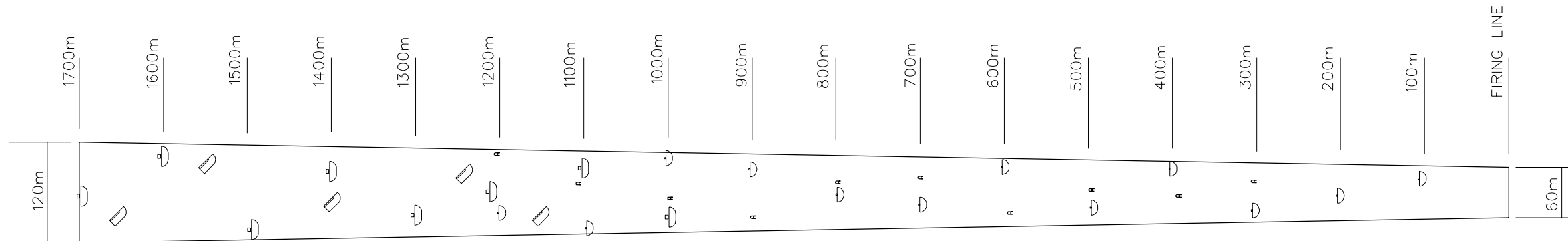
[illegible]

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	Submitted by:		File name:	
			Plot date:	
		Plot scale:		

RANGE AND TRAINING LAND PROGRAM
STANDARD DESIGN MANUALFCC • 17829
HEAVY SNIPER RANGE

Sheet
reference
number:

Sheet 0



LEGEND

MOVING INFANTRY
TARGET (MIT)

IRON MAIDEN

STATIONARY INFANTRY
TARGET (SIT)

STATIONARY ARMOR
TARGET (SAT) WITH
MATERIAL POP-UPS

[illegible]

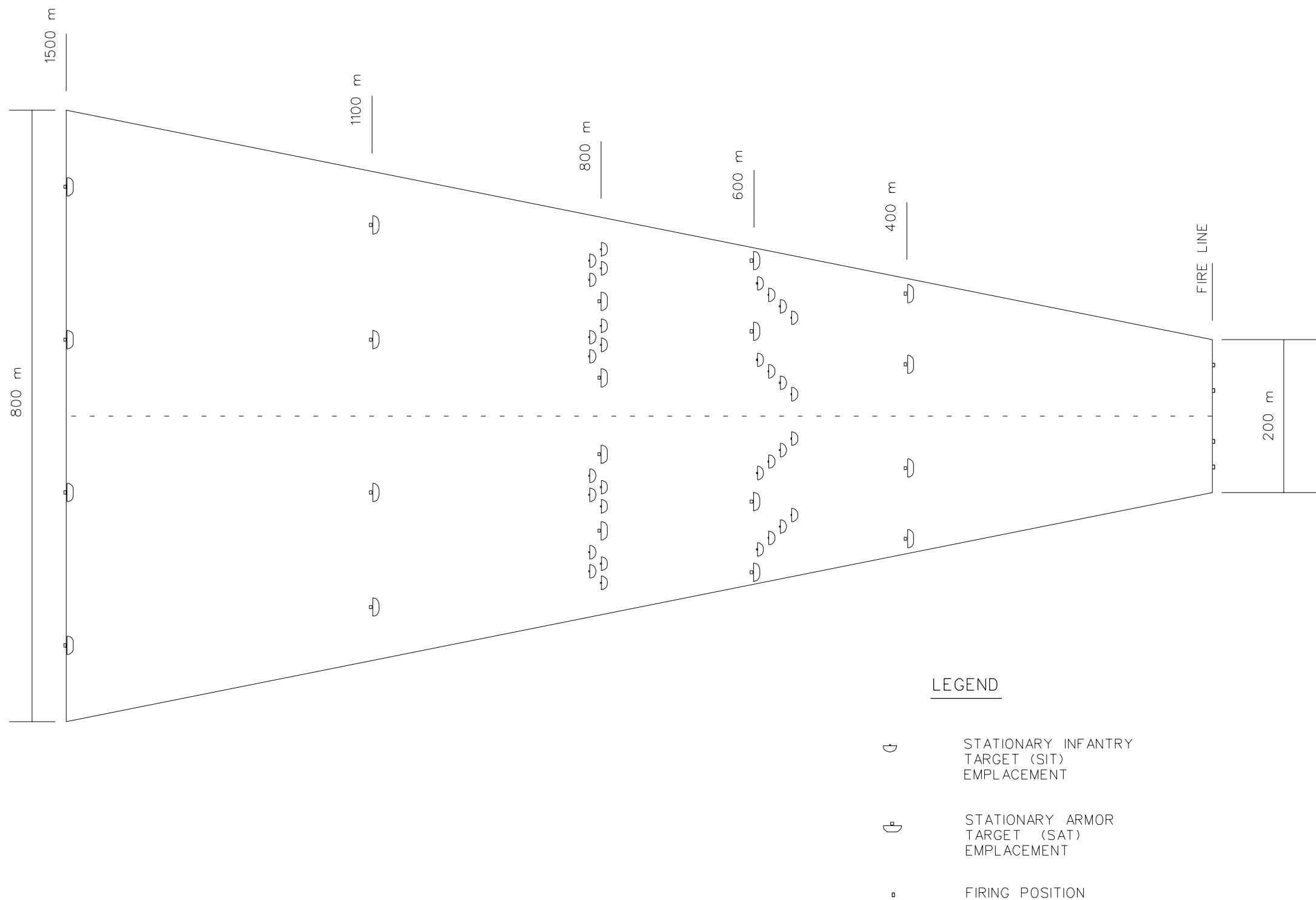
U. S. ARMY ENGINEERING AND SUPPORT CENTER, HUNTSVILLE HUNTSVILLE, ALABAMA	Designed by:		Date:	Rev.
	Drawn by:	Chk by:	Design file no.	
	Reviewed by:		Drawing code:	
	Submitted by:		File name: Plot date: Plot scale:	

RANGE AND TRAINING LAND PROGRAM STANDARD DESIGN MANUAL

FCC • 17834
40mm (GRENADE) MACHINE
GUN QUALIFICATION RANGE

Sheet
reference
number:

M19-1

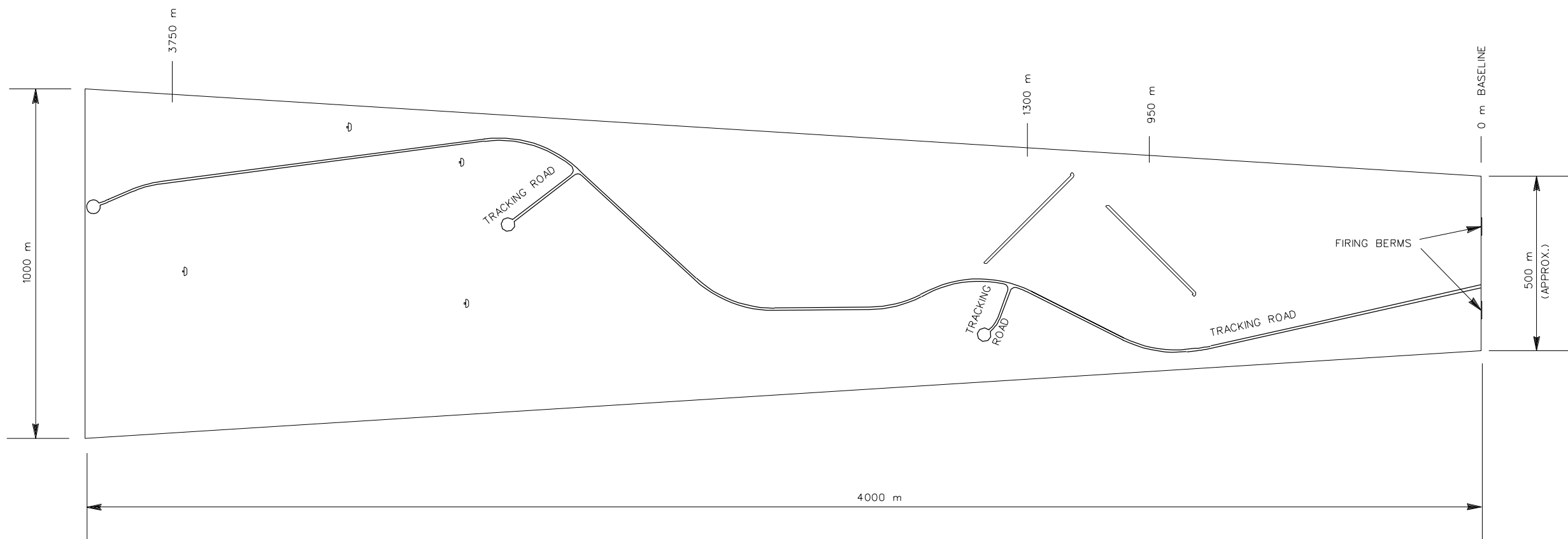


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	Submitted by:		File name: Plot date: Plot scale:	

RANGE AND TRAINING LAND PROGRAM
STANDARD DESIGN MANUAL
FCC • 17845
ANTIARMOR TRACKING & LIVE
FIRE RANGE

Sheet
reference
number:
AAT-1
Sheet of



NOTES:

1. ALL AMTC AND SAT EMPLACEMENTS ARE DESIGNED FOR TANK AND BFV GUNNERY ONLY.
2. MOVING ARMOR TARGET EMPLACEMENTS ARE 350 METERS LONG.
3. SUPPORT FACILITIES TO BE SITED AT LOCATIONS SUITABLE TO RANGE OPERATIONS.
4. LOCATION OF THE BORESIGHT MUST BE COORDINATED WITH THE TRAINER.
5. GUNNERY TASKS REQUIRING THE USAGE OF DUD-PRODUCING AMMUNITION CANNOT BE FIRED ON THE RANGE PROPER. PROVISIONS FOR THESE TASKS MUST BE MADE IN IMPACT AREAS ADJACENT TO RANGE.

LEGEND

-
- Diagram illustrating a turnaround maneuver. A vehicle is shown moving from left to right, then turning around to move from right to left, indicated by a curved arrow.
- STATIONARY ARMOR
TARGET (SAT)
EMPLACEMENT
- MOVING ARMOR TARGET
(MAT) EMBLACEMENT
- TURNAROUND

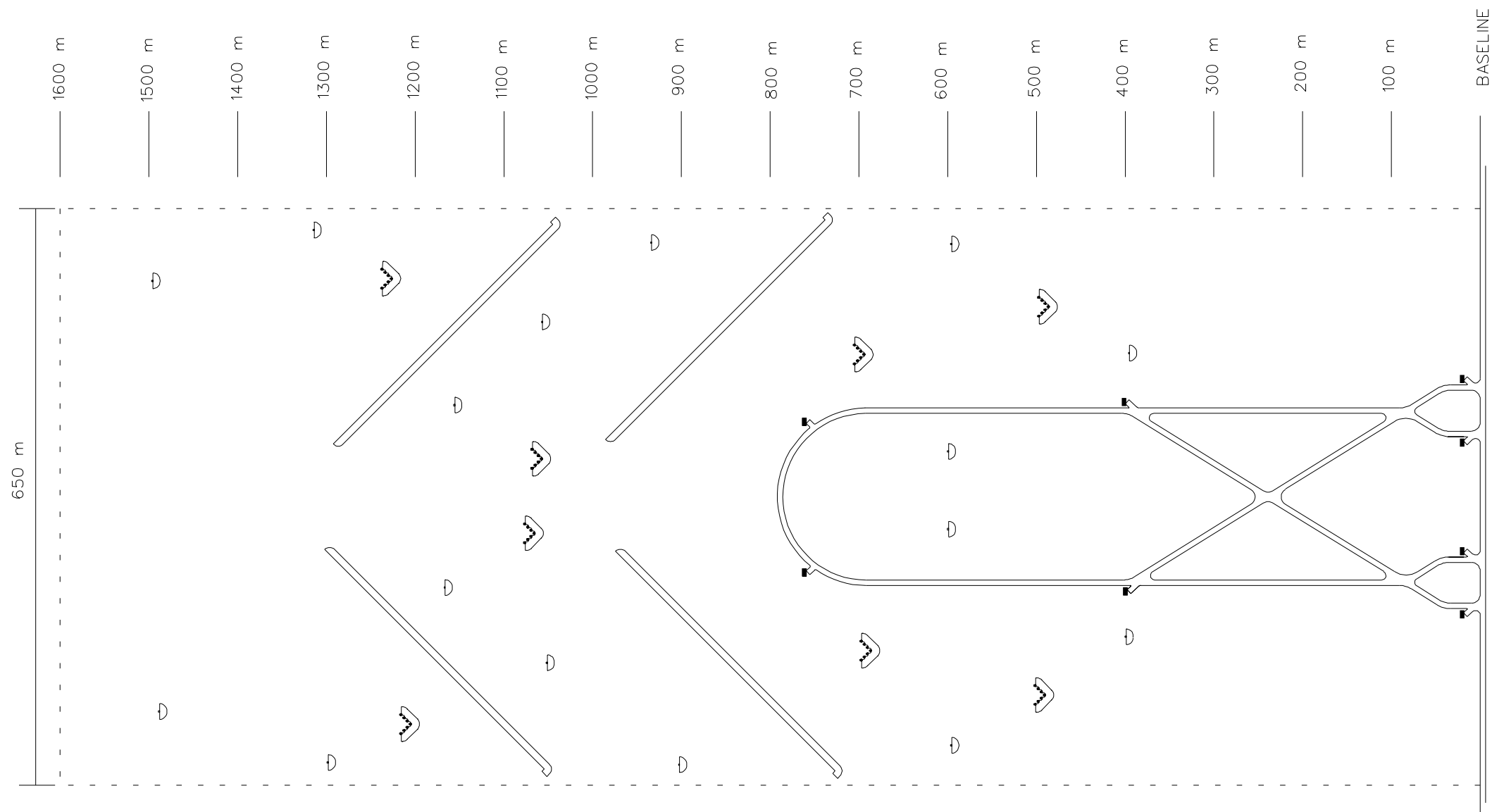
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		Plot scale:		

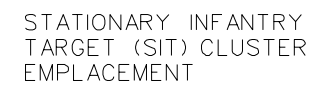
RANGE AND TRAINING LAND PROGRAM STANDARD DESIGN MANUAL

FCC • 17858
SCOUT RANGE

Sheet
reference
number:
SCT-1
Sheet of



LEGEND

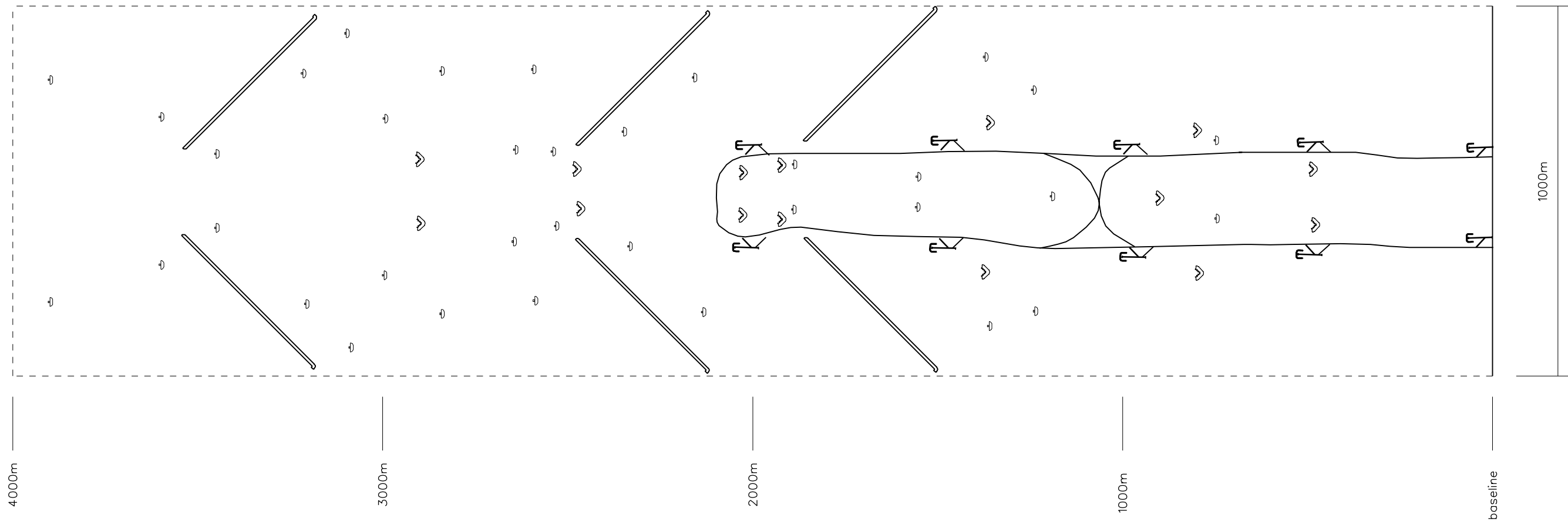


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			Plot date:	
		Plot scale:		

RANGE AND TRAINING LAND PROGRAM
STANDARD DESIGN MANUAL
FCC • 17859
DIGITAL MULTIPURPOSE TRAINING RANGE

Sheet
reference
number:
DMT-1
Sheet of



LEGEND



[illegible]

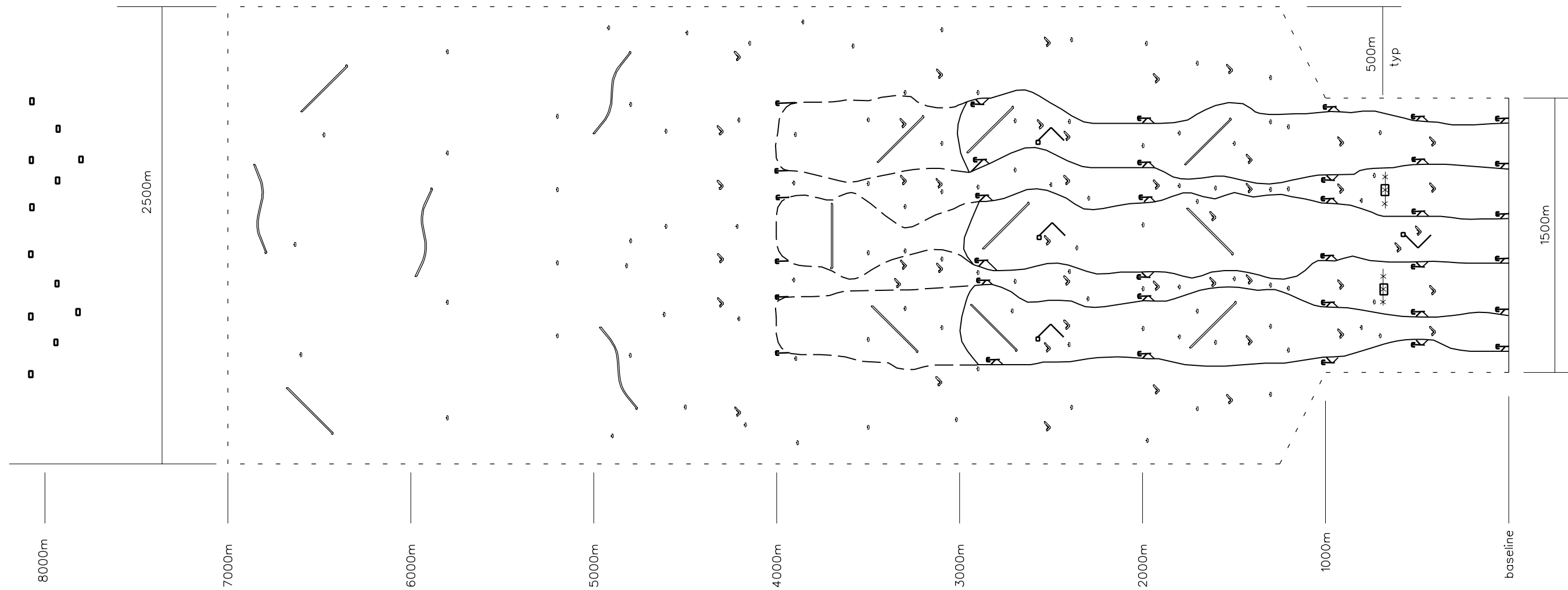
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RANGE AND TRAINING LAND PROGRAM
STANDARD DESIGN MANUAL

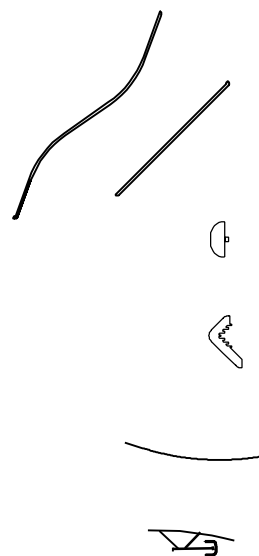
FCC• 17860

DIGITAL MULTIPURPOSE RANGE COMPLEX

Sheet
reference
number:
DMC-1
Sheet of



LEGEND



MOVING ARMOR TARGET (MAT) EMPLACEMENT

STATIONARY ARMOR TARGET (SAT) EMPLACEMENT

INFANTRY TARGET EMPLACEMENT CLUSTER (7 SIT'S and 1 MIT)

TRAIL

DEFILADE POSITION

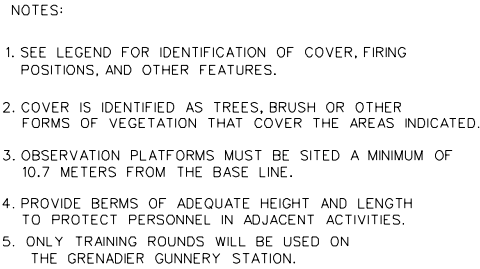


OPTIONAL TRAILS

STATIC TARGET

TRENCH WITH BUNKER

BREACHING OBSTACLE

[illegible]

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	Plot scale:		

RANGE AND TRAINING LAND PROGRAM
STANDARD DESIGN MANUAL
URBAN ASSAULT COURSE
SITE LAYOUT

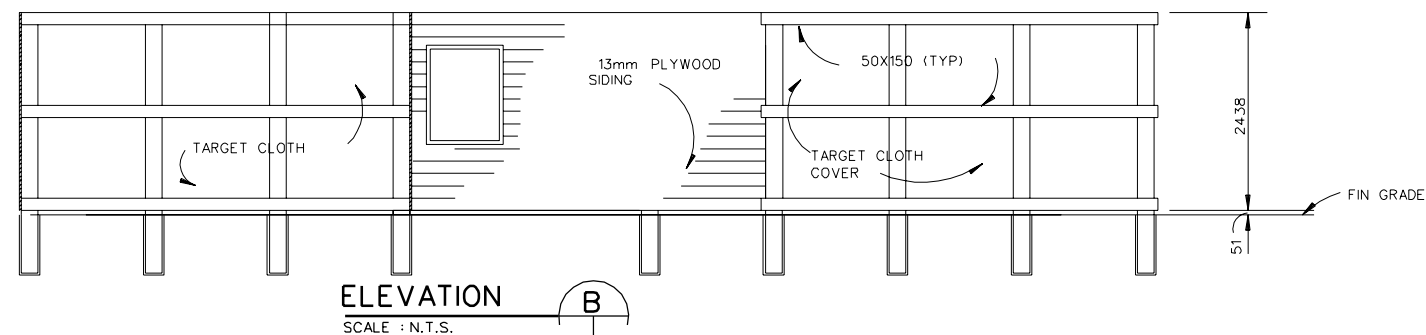
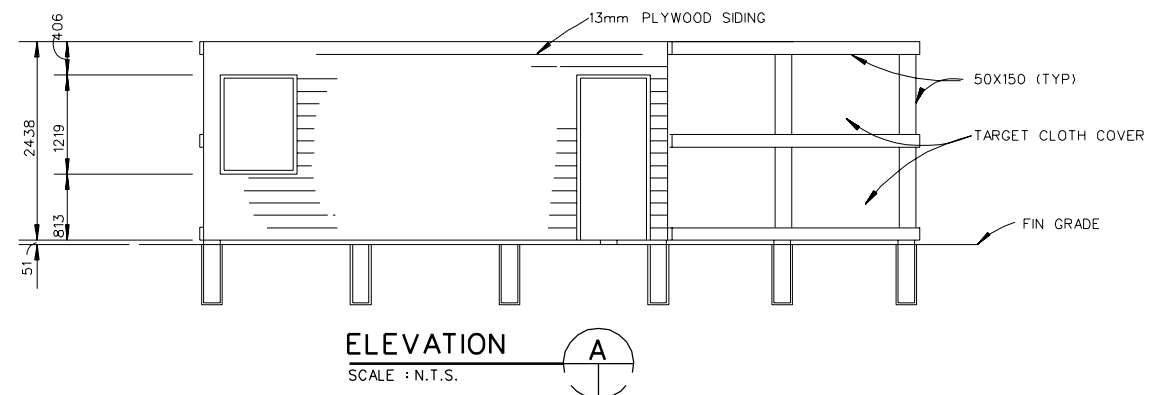
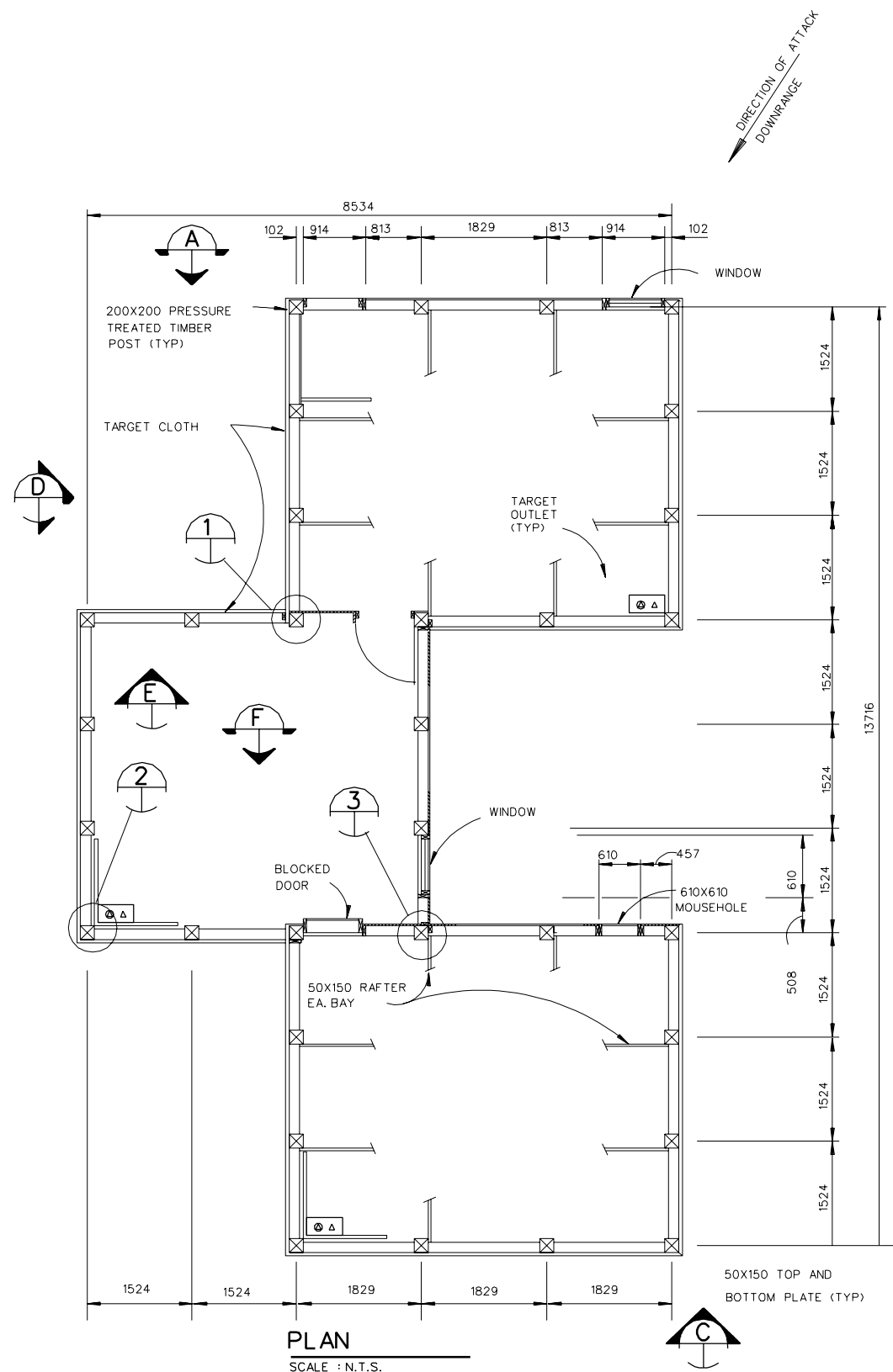
Sheet
reference
number:
UAC - 1

[illegible]

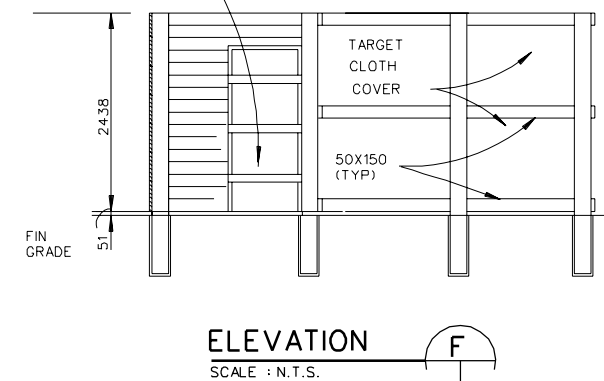
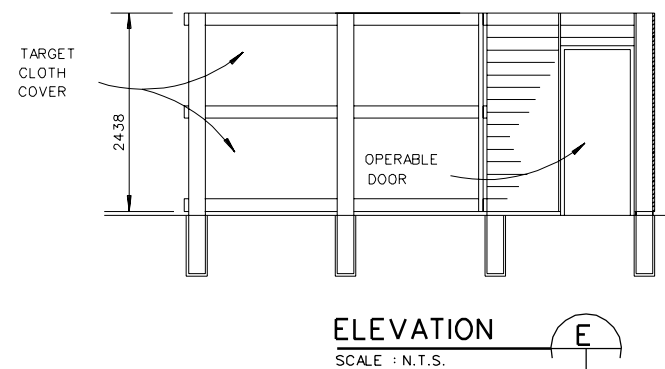
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	Submitted by:		File name: Plot date: Plot scale:	

RANGE AND TRAINING LAND PROGRAM
 STANDARD DESIGN MANUAL
 URBAN ASSAULT COURSE
 STATION 1
 INDIVIDUAL AND TEAM TECHNIQUES

Sheet
reference
number:
UAC-2



BLOCKED DOOR TO BE
VISIBLY BLOCKED FROM
MIDDLE ROOM W/BOARDS
NOT TO BE A FUNCTIONAL
DOOR. TROOPS WILL ENTER
ROOM THRU MOUSEHOLE



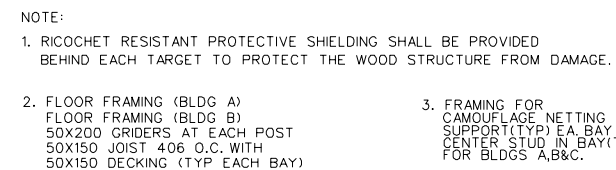
NOTE:

RICOCHET RESISTANT PROTECTIVE SHIELDING
 SHALL BE PROVIDED BEHIND EACH TARGET TO
 PROTECT THE WOOD STRUCTURE FROM DAMAGE.



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	Submitted by:			File name: Plot date: Plot scale:

Sheet
reference
number:
UAC-3





Sheet
reference
number:
UAC-4

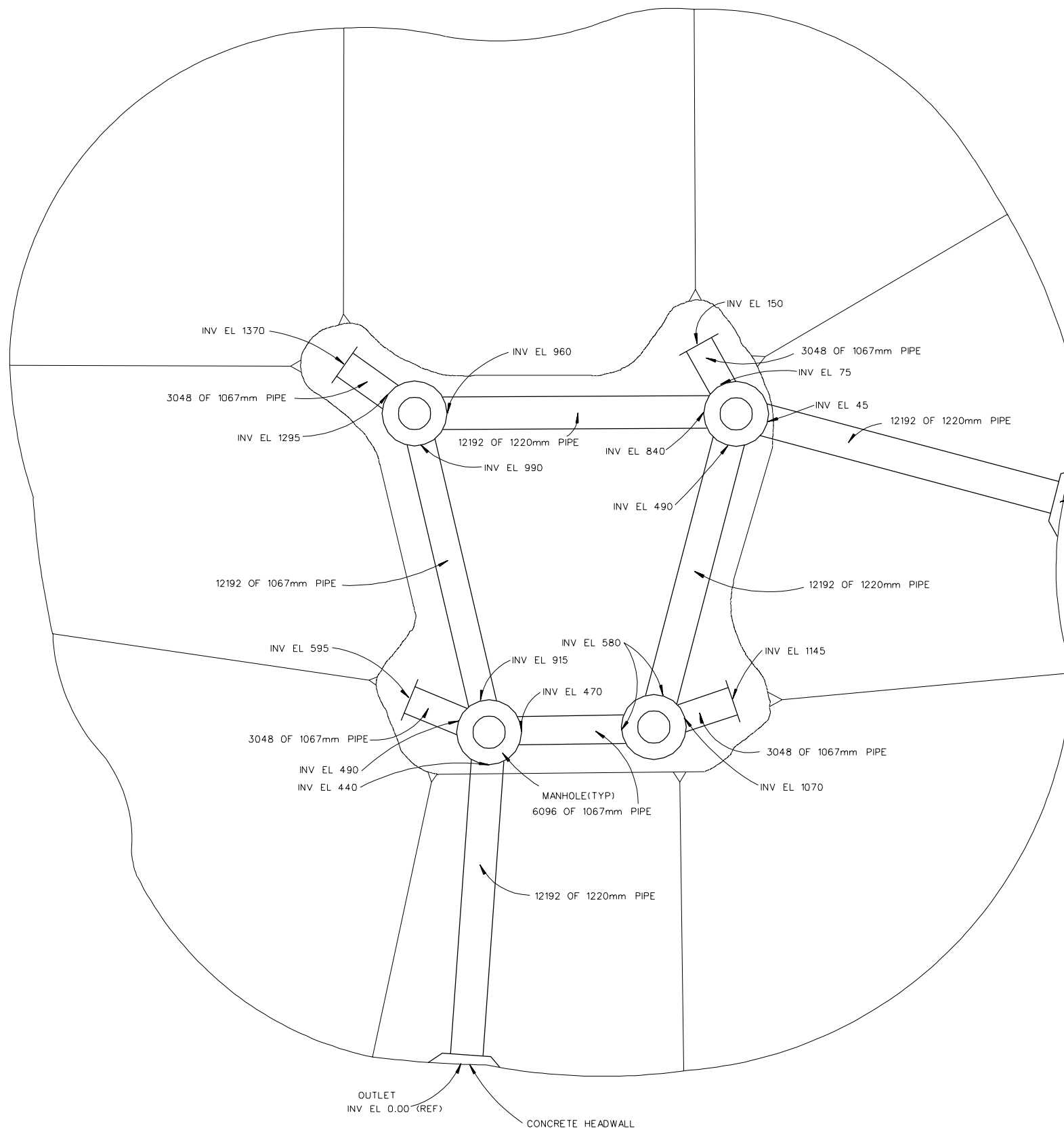
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RANGE AND TRAINING LAND PROGRAM
STANDARD DESIGN MANUAL

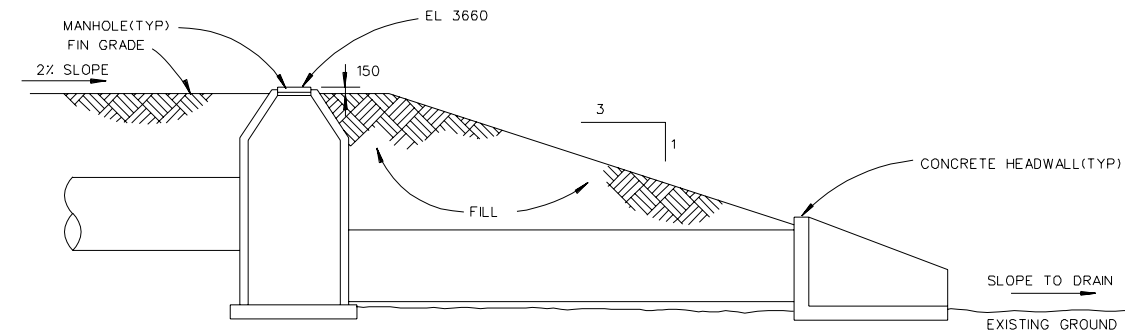
URBAN ASSAULT COURSE
STATION 5
UNDERGROUND TRAINER

Sheet
reference
number:
UAC-6



SITE PLAN

SCALE : 1/ 8" = 1'-0"




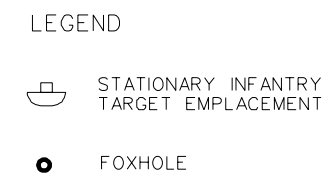
TYPICAL SECTION
SCALE : 3/ 16" = 1'-0"

NOTE: FURNISH REMOVABLE WIRE SCREEN
AT ALL HEADWALL ENTRANCES.

THE UNDERGROUND TRAINER IS NOT
INTENDED FOR LIVE-FIRE TRAINING

THIS STATION IS OPTIONAL.IT IS INTENDED
FOR BASIC UNDERGROUND TRAINING.THE
UNDERGROUND TRAINER ATTACHED TO
THE URBAN OFFENSE/DEFENSE BUILDING
IS INTENDED FOR MORE ADVANCED TACTICAL TRAINING

AN UNDERGROUND CHAMBER MAY BE ADDED
AS AN OPTION



US Army Corps
of Engineers

[illegible]

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RANGE AND TRAINING LAND PROGRAM
STANDARD DESIGN MANUAL

FCC- 17893

SQUAD DEFENSE RANGE

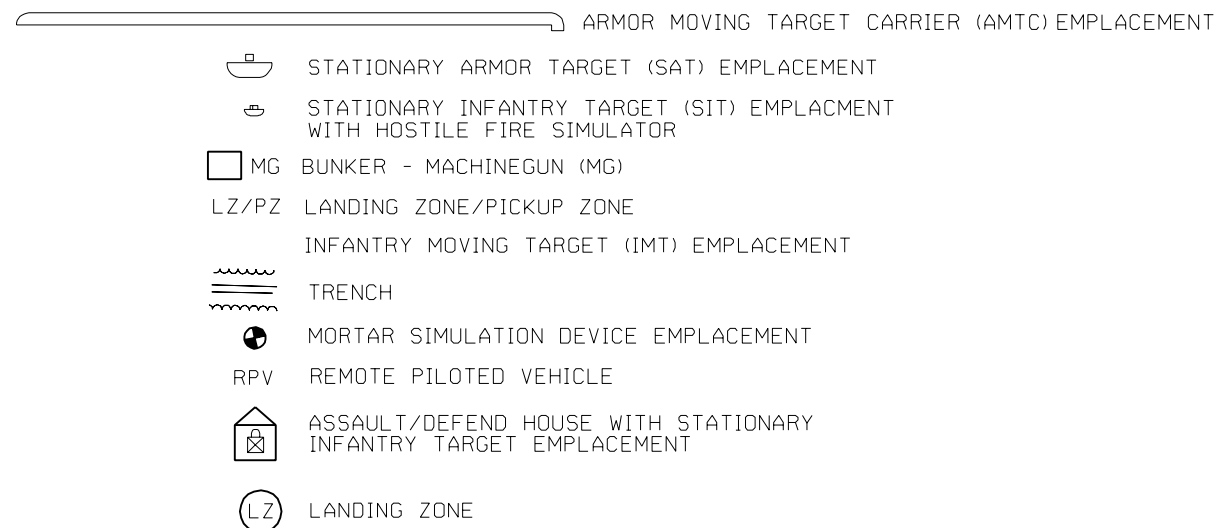
Sheet
reference
number:
SDR-1
Sheet of



SEE SHEET L-10 FOR LEGEND AND
GENERAL NOTES.

[illegible]

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	Submitted by:		File name:	
			Plot name:	



DESIGNER NOTES:

1. IPBC LAYOUT DEPICTS TARGET POSITIONS AND TRAINING SCENARIOS SPECIFICALLY TAILORED FOR THE TOPOGRAPHY SHOWN. THE INSTALLATION'S TRAINING OFFICER MUST DETERMINE THE LAYOUT OF THE IPBC IN ORDER TO MAKE BEST USE OF THE AVAILABLE LAND. THE SIZE, POSITIONING, AND DISTANCE FROM THE BASELINE OF EACH OBJECTIVE IS FLEXIBLE AND SHOULD BE ADJUSTED TO SUIT ANY GIVEN RANGE.
2. LIMIT MARKERS MUST BE POSITIONED BASED ON SITE-SPECIFIC CONDITIONS FOR EACH OBJECTIVE AND THE ENTIRE RANGE.
3. RANGE BOUNDARIES ARE GENERIC AND REPRESENT MAXIMUM EXPECTED LAND-USE REQUIREMENTS. ACTUAL RANGE BOUNDARY CONFIGURATION MAY VARY DEPENDING ON SITE SPECIFIC CONDITIONS.
4. SITE CONTROL TOWER 15-50 METERS BEHIND THE BASELINE IN AN AREA THAT WILL PROVIDE AN UNOBSTRUCTED VIEW OF THE BASELINE. SITE THE ADMINISTRATION AREA APPROXIMATELY 250 METERS BEHIND THE BASELINE. BOTH THE CONTROL TOWER AND THE ADMINISTRATION AREA SHOULD BE LOCATED TO ONE SIDE OF THE BASLINE IN ORDER TO PROVIDE AN UNOBSTRUCTED ASSEMBLY AND ADVANCEMENT AREA.
5. THIS RANGE IS NOT DESIGNED FOR TANKS OR MECHANIZED VEHICLES BEYOND THE BASELINE.
6. THE INSTALLATION'S TRAINING OFFICER MUST CHOOSE SIX TARGET-FIRING POSITION PAIRS TO RECIEVE THE LOCATION OF MISS AND HIT SYSTEMS (LOMAH).
7. SEE SHEETS L-13 AND L-14 FOR OBJECTIVES A,B,C,D,E AND F LAYOUTS.

[illegible]

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RANGE AND TRAINING LAND PROGRAM
 STANDARD DESIGN MANUAL
 FCC# 17897
 INFANTRY PLATOON BATTLE COURSE
 (3 OF 3)

Sheet
reference
number:
IPB-3

Sheet of

The map is a tactical diagram of a battlefield area, divided into three sections by dashed lines. The map shows various units, including tanks (E1-E11), machine guns (MG), and other vehicles. Arrows indicate the 'DIRECTION OF FIRE' from the bottom. The map is labeled with 'E9', 'E10', 'E8', 'E7', 'E6', 'E5', 'E4', 'E3', 'E2', 'E1', 'E11', 'MG', 'E12', 'E13', 'E14', 'E15', 'E16', 'E17', 'E18', 'E19', 'E20', 'E21'.

Section 1 (Left): Contains units E9, E10, E8, E7, E6, E5, E4, E3, E2, E1, and MG. A house icon is located near E9 and E10. A compass rose is in the bottom left corner.

Section 2 (Middle): Contains units E11 and MG. A long horizontal line is labeled E12.

Section 3 (Right): Contains units E13, E14, E15, E16, E17, E18, E19, E20, and E21. A compass rose is in the top right corner.

Arrows at the bottom of each section point upwards, labeled 'DIRECTION OF FIRE'.

NOTE:
1. SEE SHEET L-12 FOR LEGEND AND
GENERAL NOTES

GENERAL NOTES

REFERENCE CRITERIA

The design and construction must comply with applicable codes and standards including: technical instruction TI 800-01, "Design Criteria"; Department of the Army regulations, technical manuals, handbooks, standards, and specifications; UBC, NEMA, ANSI, UL, ASTM, and NFPA standards, as required.

FUNCTIONAL REQUIREMENTS

All dimensions not labeled are in millimeters. Gutters, downspouts and splash blocks should be provided where required by climatic conditions. Covered entries and ice guards may be necessary in northern climates.

Concrete Masonry Units shown on the drawings are for illustrative purposes only. This represents one type of several construction methods that could be considered in design of buildings.

All buildings are designed to be accessed only by able-bodied personnel and do not require ADA compliance unless dictated by local criteria.

Openings in the walls are to simulate windows.
There are no operable windows.

Lightning Protection is not required for this building.

FIRE PROTECTION

Fire Protection is not required per fire codes for these buildings. Consult local Fire Marshall for compliance with local laws.

ELECTRICAL SYMBOLS AND NOTES

 CAMERA WITH CAMERA OUTLET

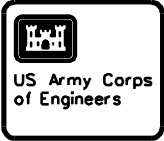
 TARGET, TWIST-LOCK POWER OUTLET
AND 2-CAT 5E CABLE JACKS (RJ-45)

All buildings shall be served by 120/240V 1 phase, 3-wire secondary power. Rigid Steel conduit shall extend a minimum of 1524 mm (5') outside the building for power and communication circuits entering and leaving the building. Voltage drop shall comply with NEC standards and Army technical manuals. Grounding will be installed in accordance with NFPA 70, the NEC, and other applicable standards.

The panel board shall be 120/240V single phase, mounted inside building. Target data and power outlets and camera outlets shall be provided.

Illumination levels will be designed in accordance with IES. Interior lighting shall consist of fluorescent lamps at 30 foot-candles. Exterior lighting shall be provided with sepearateswitching located near points of egress.

The electrical system shall comply with NFPA 70 and NFPA 101. Exit signs will be provided in accordance with NFPA 101.

[illegible]

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			ctr-02 warhouse/JON	
	Reviewed by:		Drawing code:	
			STD 179-23-01	
	Submitted by:		File name:	
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RANCE AND TRAINING LAND PROGRAM
STANDARD DESIGN MANUAL
COLLECTIVE TRAINING FACILITY
GENERAL NOTES

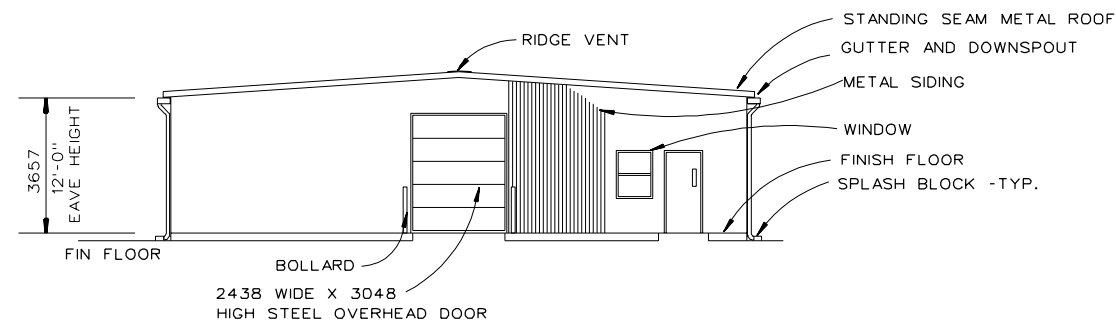
Sheet
reference
number:
CTF-02

[illegible]

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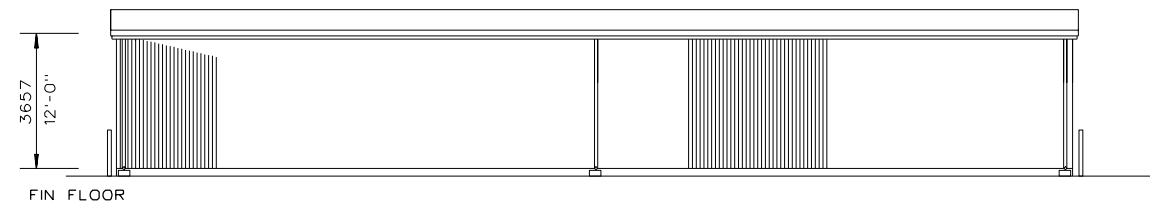
RANGE AND TRAINING LAND PROGRAM
STANDARD DESIGN MANUAL
COLLECTIVE TRAINING FACILITY
WAREHOUSE
PLANS AND ELEVATIONS

Sheet
reference
number:
CTF-03



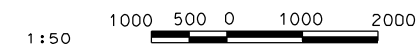
ELEVATION B

SCALE : 1:50



ELEVATION A

SCALE : 1:50



ALL DIMENSIONS ARE IN MILLIMETERS
(mm) UNLESS OTHERWISE NOTED

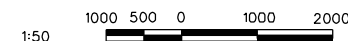
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	Own by:	Ckd by:	Design file no.	
	Reviewed by:		Drawing code:	
	Submitted by:		File name: Plot date: Plot scale:	

RANGE AND TRAINING LAND PROGRAM
STANDARD DESIGN MANUAL
COLLECTIVE TRAINING FACILITY
MUNICIPAL BUILDING
PLANS

Sheet
reference
number:

CTF-04



ALL DIMENSIONS ARE IN MILLIMETERS
(mm) UNLESS OTHERWISE NOTED

[illegible]

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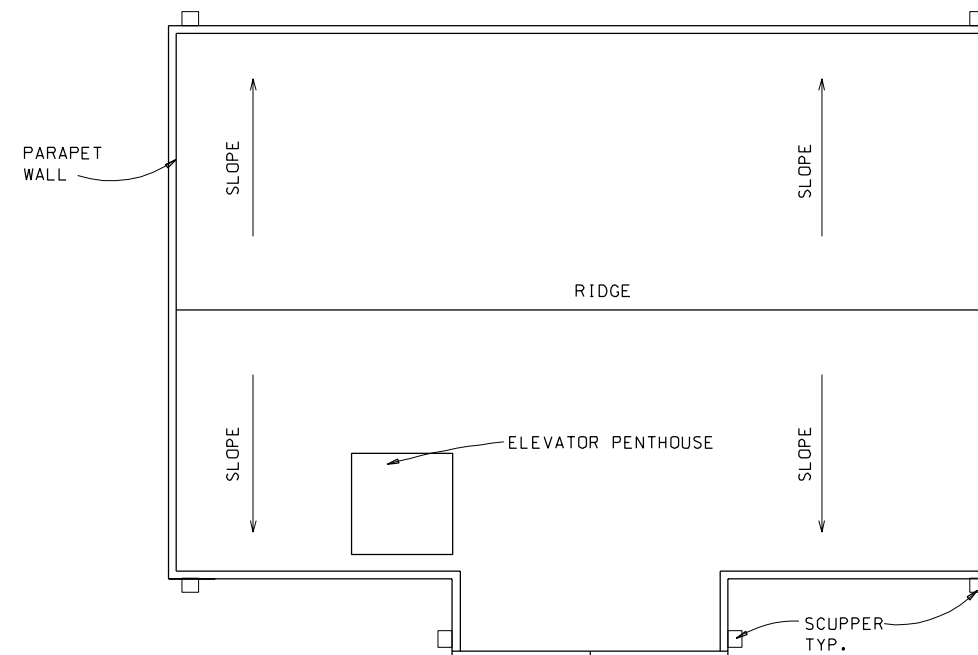
RANGE AND TRAINING LAND PROGRAM
STANDARD DESIGN MANUAL
COLLECTIVE TRAINING FACILITY
MUNICIPAL BUILDING
ELEVATIONS

Sheet
reference
number:
CTF-05



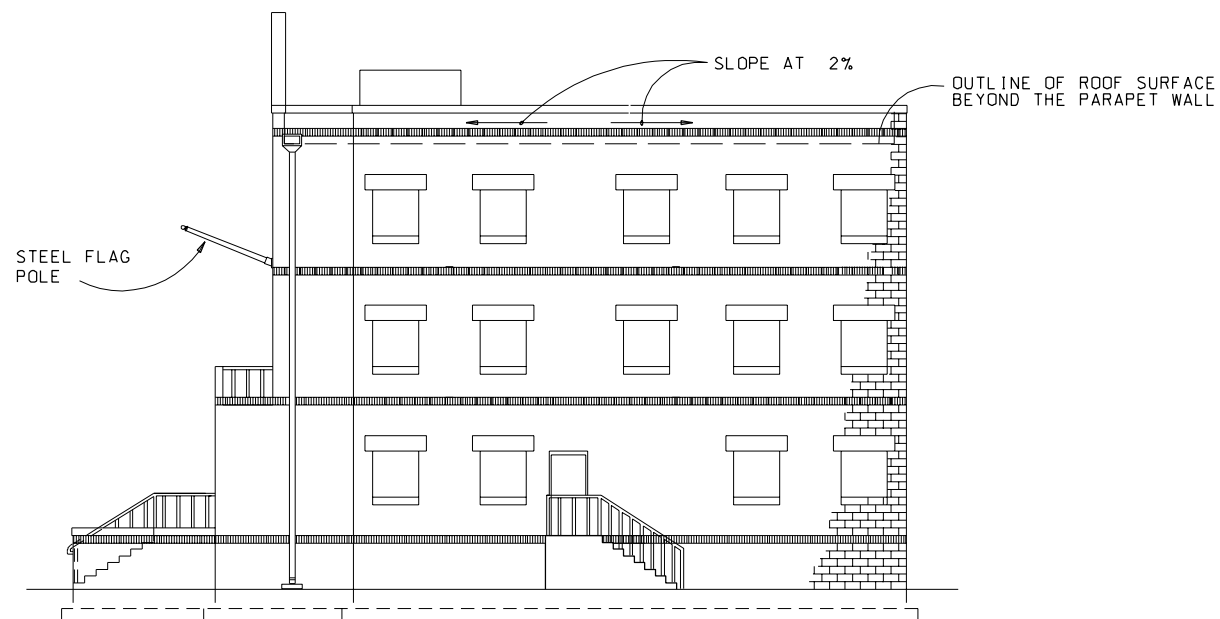
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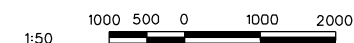
ROOF PLAN

SCALE: 1 : 50



ELEVATION

SCALE : 1 : 50



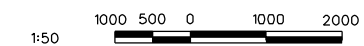
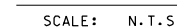
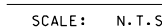
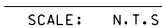
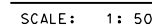
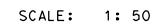
ALL DIMENSIONS ARE IN MILLIMETERS
(mm) UNLESS OTHERWISE NOTED

[illegible]

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	Reviewed by:		Drawing code:	
	Submitted by:		STU	
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RANGE AND TRAINING LAND PROGRAM
 STANDARD DESIGN MANUAL
 COLLECTIVE TRAINING FACILITY
 2 STORY OFFICE
 PLANS AND ELEVATIONS

Sheet
reference
number:
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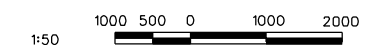
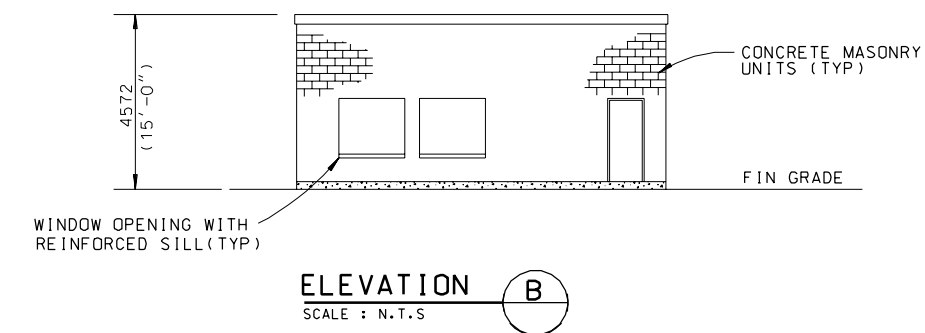
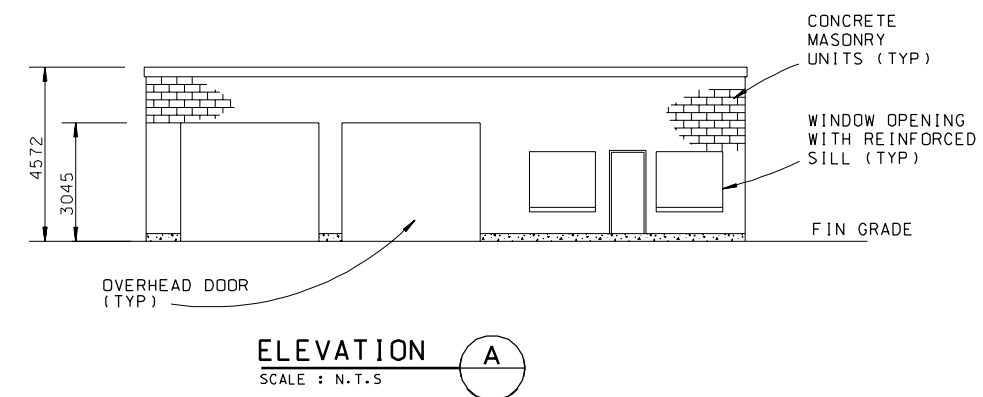
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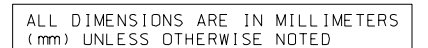
RANGE AND TRAINING LAND PROGRAM
STANDARD DESIGN MANUAL

COLLECTIVE TRAINING FACILITY
SERVICE STATION
PLANS AND ELEVATIONS

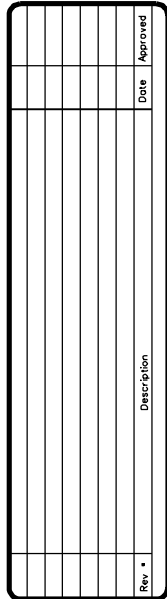
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CTF-07



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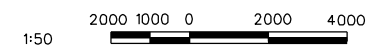
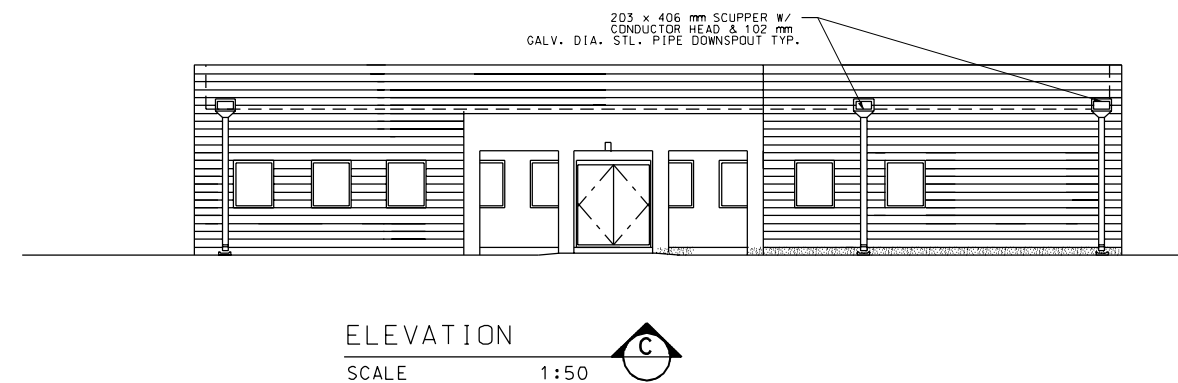
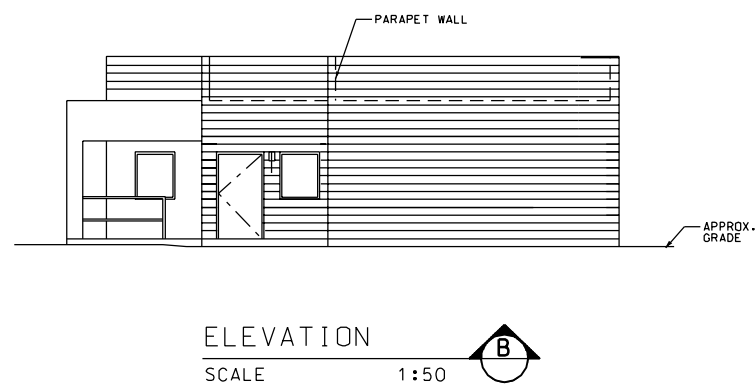
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HUNTSVILLE, ALABAMA

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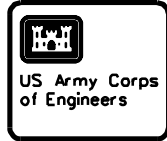


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RANGE AND TRAINING LAND PROGRAM
STANDARD DESIGN MANUAL
COLLECTIVE TRAINING FACILITY
CHURCH
PLANS AND ELEVATIONS

CTF-10

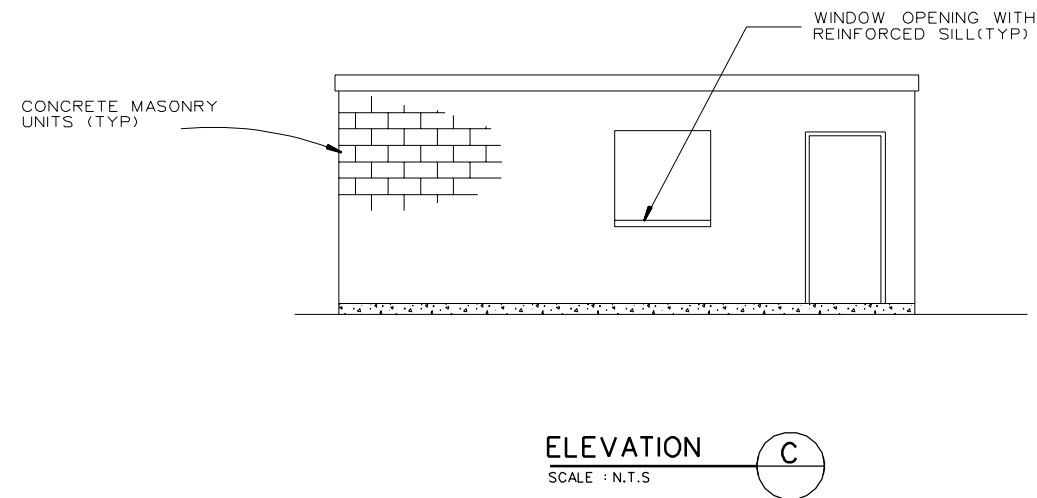
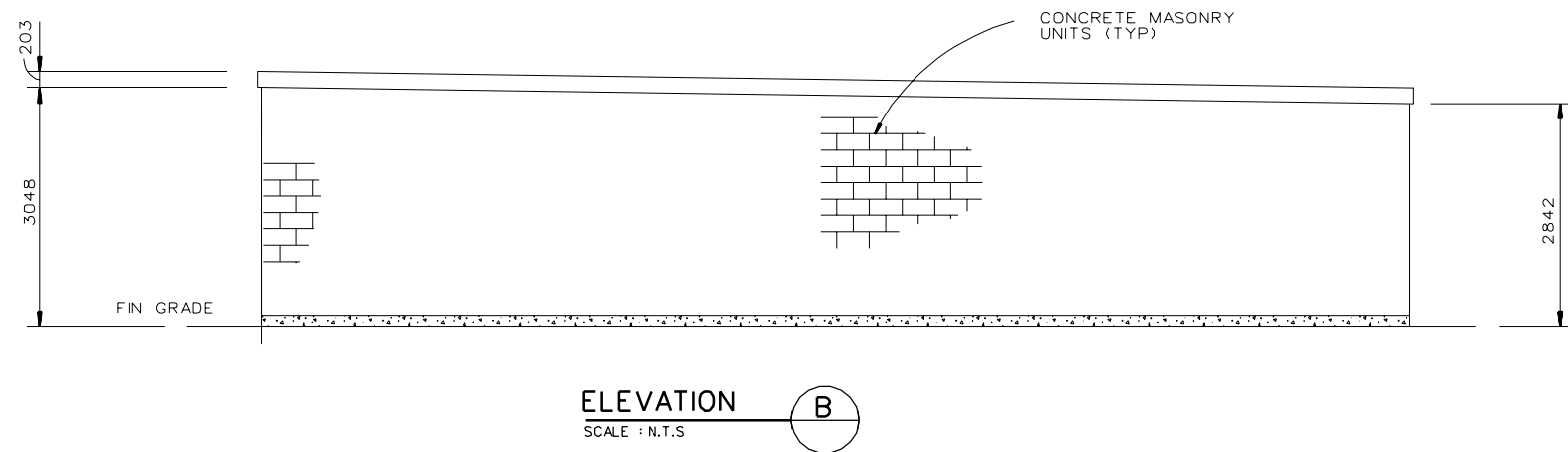
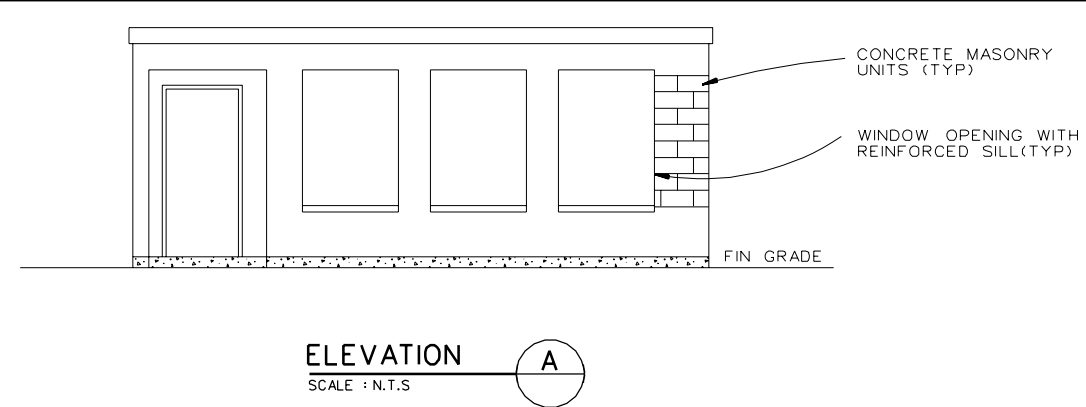
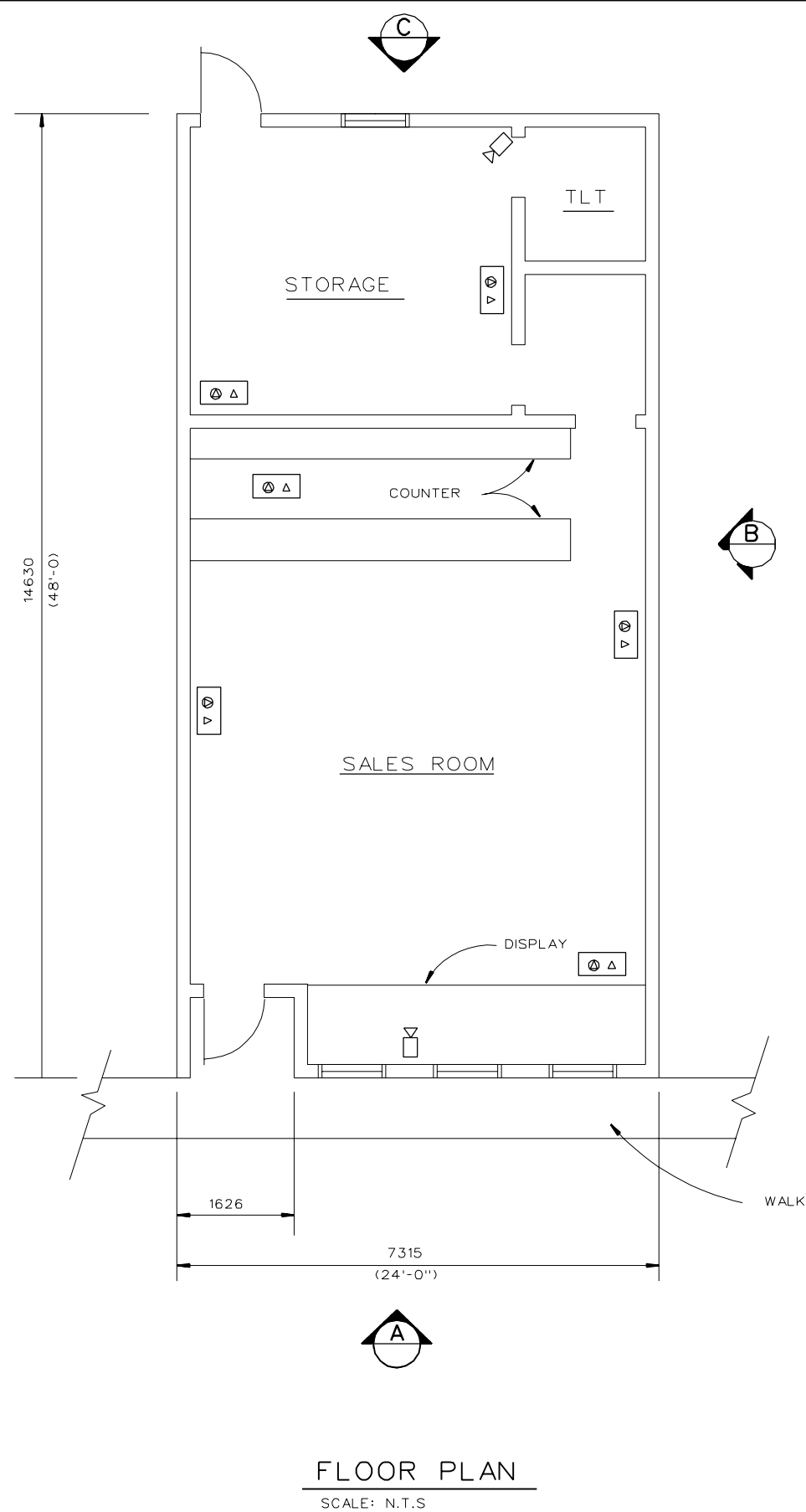
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(mm) UNLESS OTHERWISE NOTED

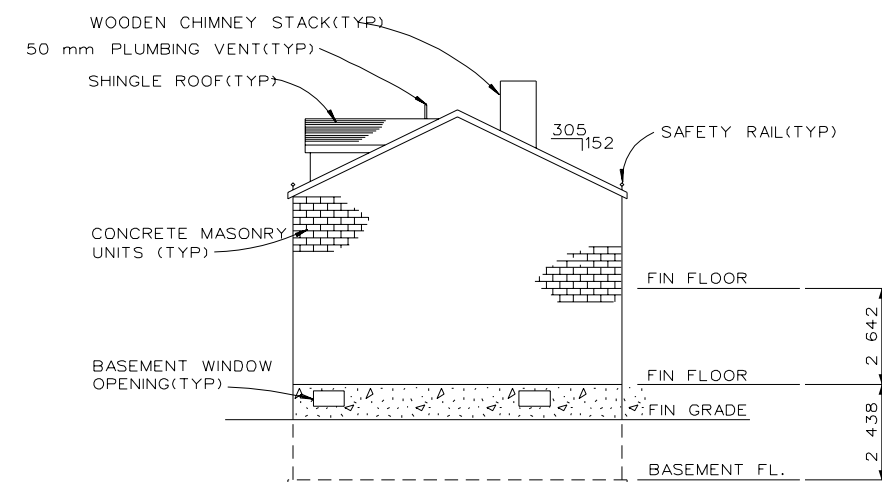
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RANCE AND TRAINING LAND PROGRAM
STANDARD DESIGN MANUAL
COLLECTIVE TRAINING FACILITY
1 STORY BUSINESS
PLANS AND ELEVATIONS

Sheet
reference
number:
CTF - 11

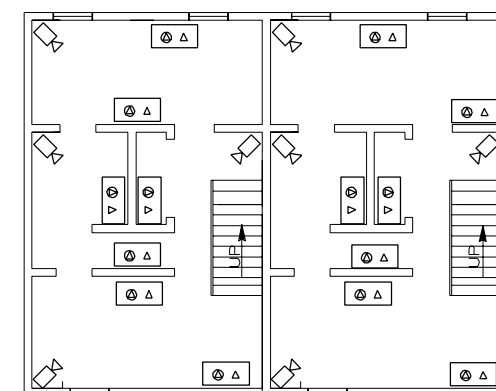
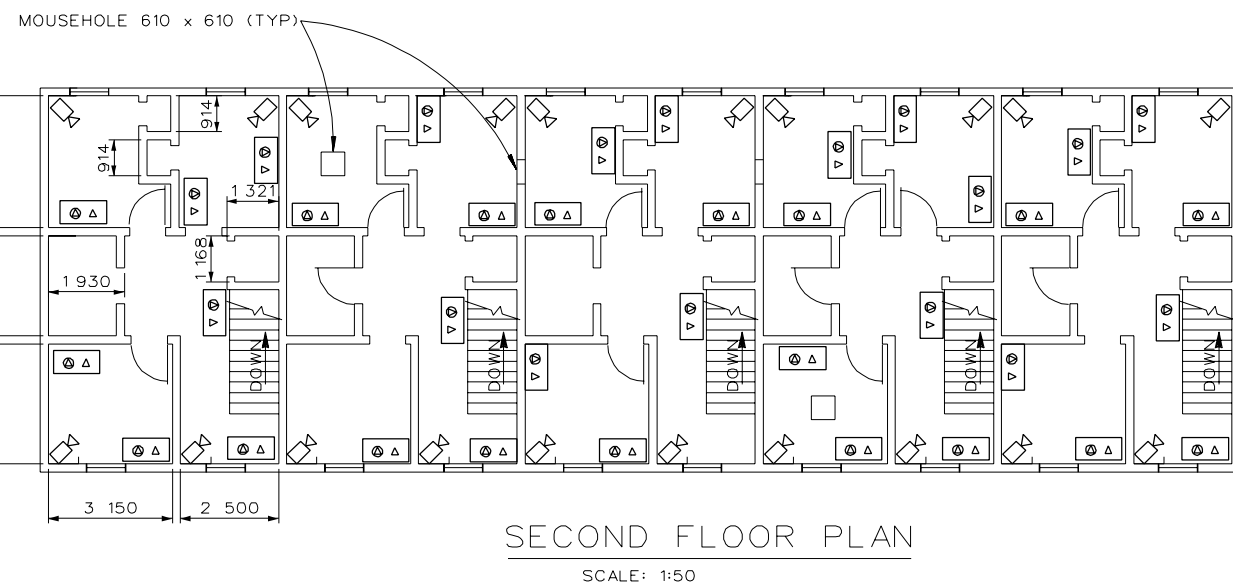




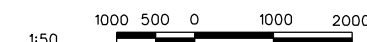
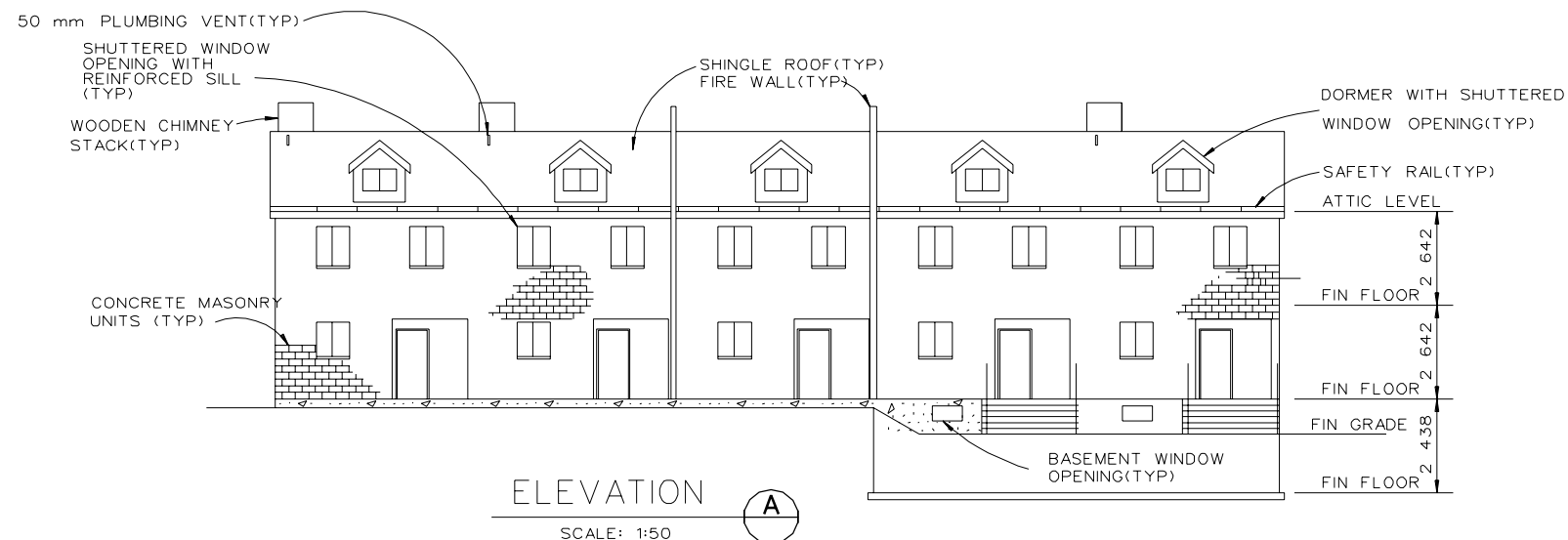
ELEVATION

SCALE: 1:50

(B)



BASEMENT PLAN



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(mm) UNLESS OTHERWISE NOTED

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Designed by:	Date:	Rev.
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Reviewed by:	Drawing code: STD 179-23-01	
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U. S. ARMY ENGINEERING AND
SUPPORT CENTER, HUNTSVILLE
HUNTSVILLE, ALABAMA

ENGINE AND TRAINING LAND PROGRAM
STANDARD DESIGN MANUAL
COLLECTIVE TRAINING FACILITY
RESIDENCE
PLANS AND ELEVATIONS

Sheet
reference
number:

CTF-14



ALL DIMENSIONS ARE IN MILLIMETERS
(mm) UNLESS OTHERWISE NOTED

[illegible]

SUPPORT TM CENTER, HUNTSVILLE HUNTSVILLE, ALABAMA	Design file no.	
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STANDARD DESIGN MANUAL
COLLECTIVE TRAINING FACILITY
SCHOOL
PLANS AND ELEVATIONS

Sheet
reference
number:

CTF-15



SCALE: N.T.S.



SCALE: N.T.S.



SCALE: 1:50



SCALE: 1:50



SCALE: 1:50



SCALE: 1:50

ALL DIMENSIONS ARE IN MILLIMETERS
(mm) UNLESS OTHERWISE NOTED

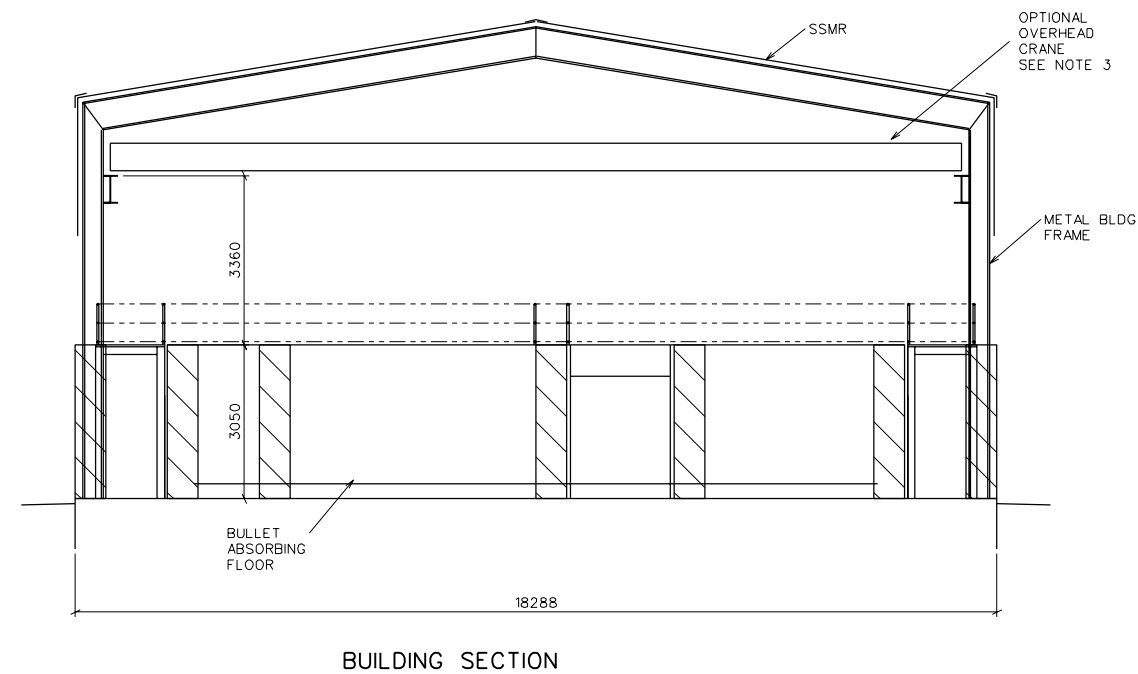
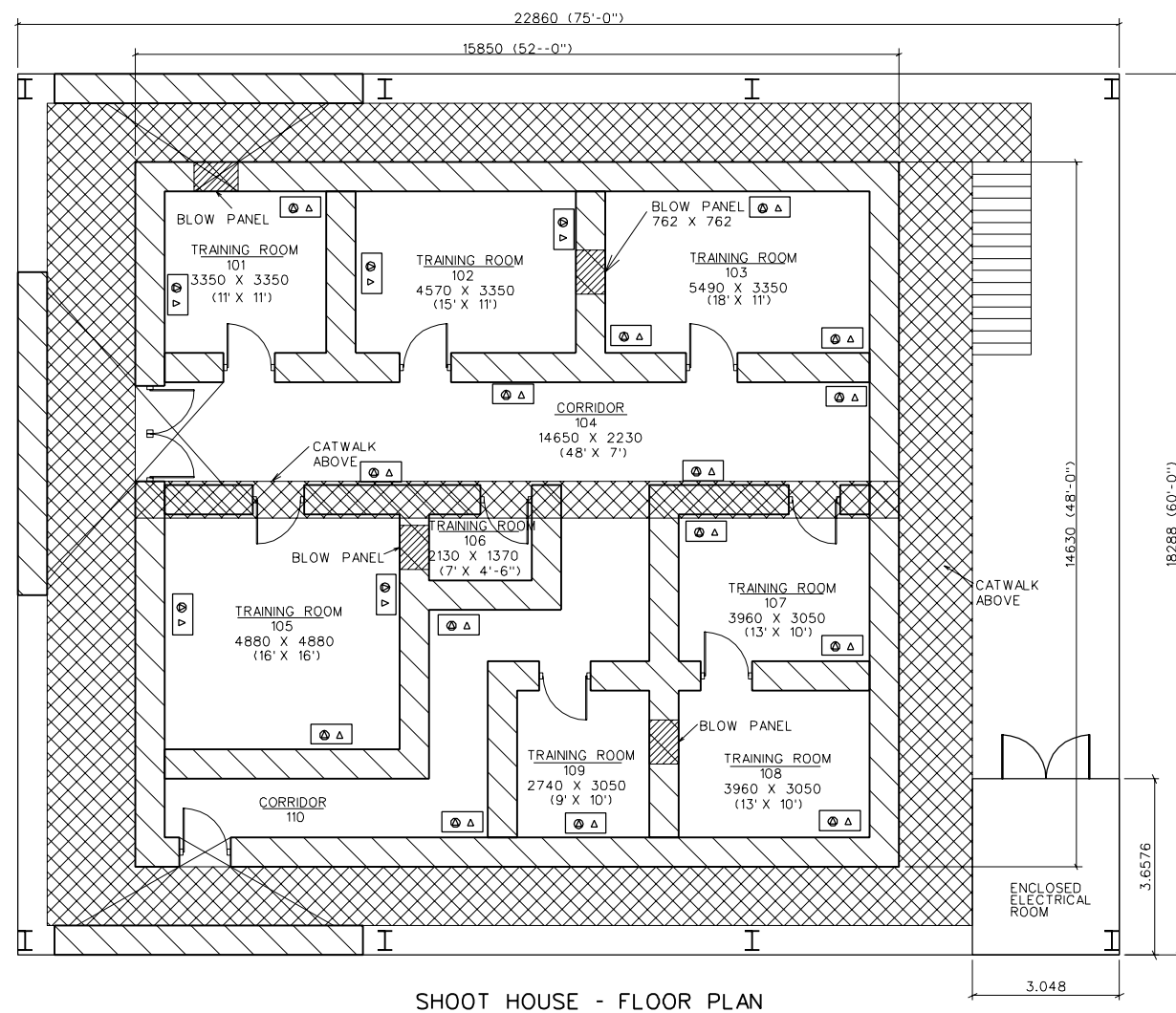
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RANGE AND TRAINING LAND PROGRAM
STANDARD DESIGN MANUAL
SHOOT HOUSE
FLOOR PLAN

Sheet
reference
number:

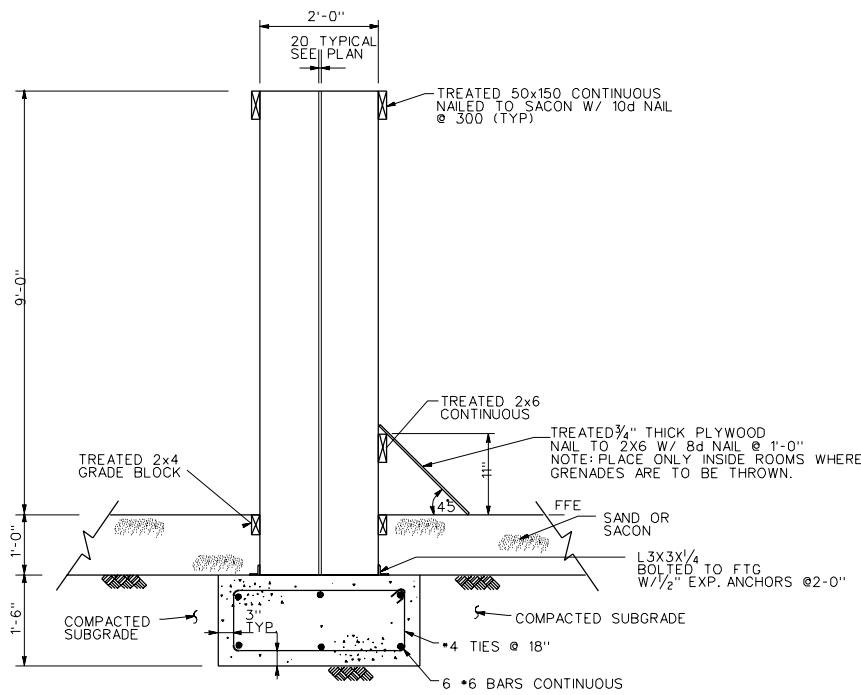
SHH- 1



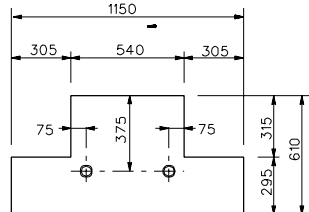
-  BULLET ABSORBING WALL PANEL
SEE NOTE 1
-  CATWALK

NOTES

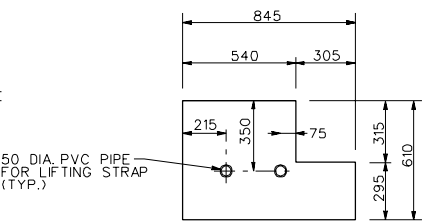
1. Bullet absorbing wall may be SACON, sand filled wall section or other commercial product designed to stop and contain rounds and ricochets.
2. Bullet traps should be used behind targets to reduce the number of rounds impacting the walls.
3. Bullet absorbing wall system must be designed to be replaceable. This may be done using the optional Overhead Crane, by using a mobile crane with a removable roof system, or some other method.
4. Target Outlet Boxes may be placed on top of the walls or in the floor in a protected enclosure. They must be placed so that a 3 meter cord can reach all areas where targets will be placed.
5. Target and Camera locations must be determined by the trainer based on the tasks required to meet the individual units METL with consideration to the SDZ.
6. The shoot house is not designed for live fragmentation/concussion grenades.
7. The shoot house must be designed to accommodate the types of mechanical and explosive breaching techniques that will be used.
8. The SDZ of the facility is based on the locations of the firing points and targets, the weapon systems used and the ricochet characteristics of the bullet absorbing walls.
9. Electrical room must be climate controlled.



SACON WALL SECTION

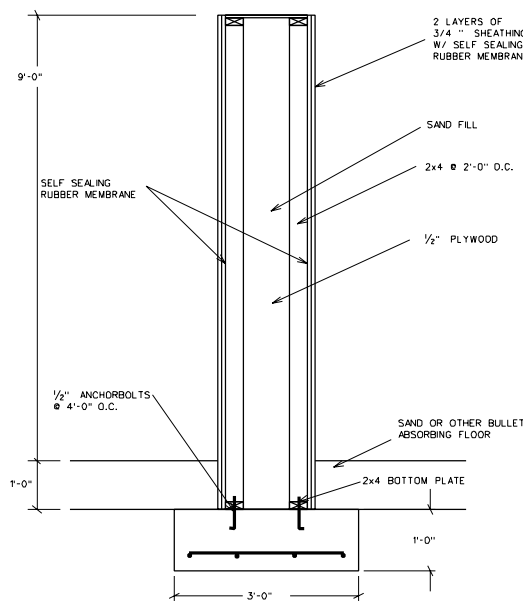


SACON PANEL SECTION - TYPE A

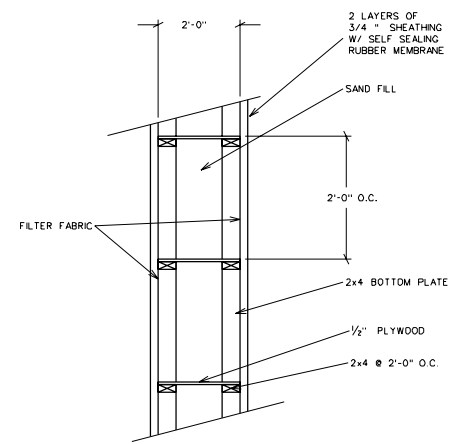


SACON PANEL SECTION - TYPE B

SACON WALL DETAILS



SECTION VIEW



PLAN VIEW

Designed by:	Date:	Rev.	
		Design file no.	
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RANGE AND TRAINING LAND PROGRAM STANDARD DESIGN MANUAL	SHOOT HOUSE FLOOR PLAN
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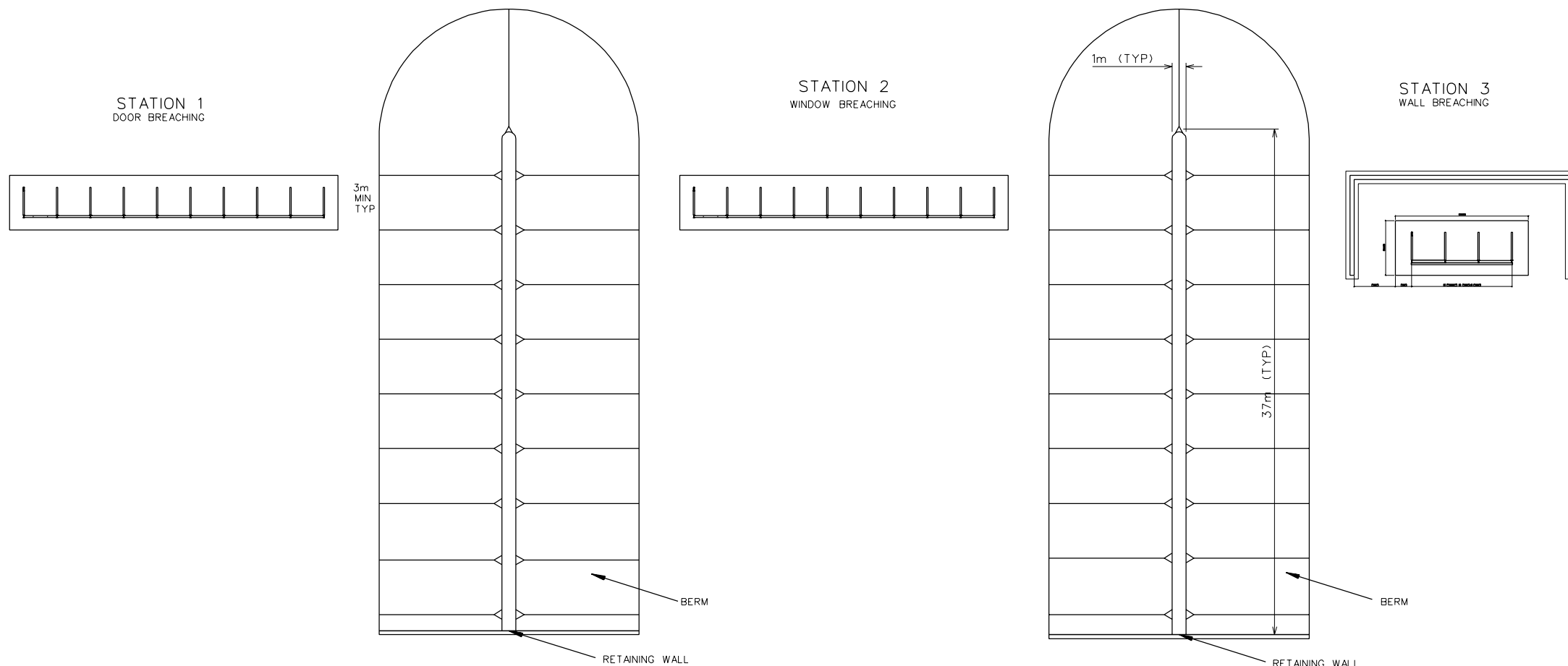
U. S. ARMY ENGINEERING AND SUPPORT CENTER, HUNTSVILLE HUNTSVILLE, ALABAMA	Designed by:		Date:	Rev.
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			Plot scale:	

RANGE AND TRAINING LAND PROGRAM
STANDARD DESIGN MANUALFCC • 17904
BREACH FACILITY
SITE LAYOUT

Sheet
reference
number:

BCH-01

Sheet 1 of 1



BREACH FACILITY - PLAN VIEW

SCALE : N.T.S.

NOTES:

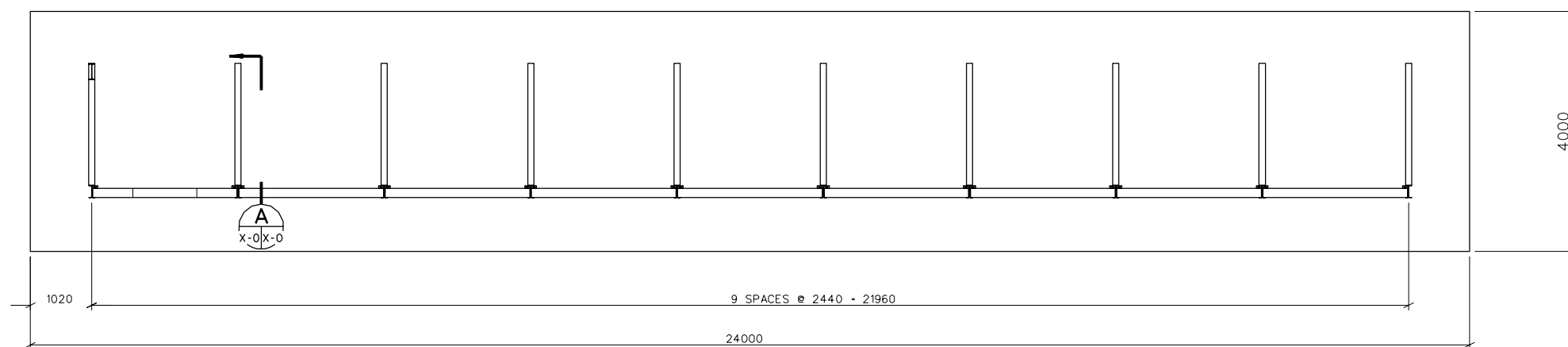
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2. SLOPE OF BERMS VARIES DEPENDING UPON SOIL CONDITIONS

[illegible]

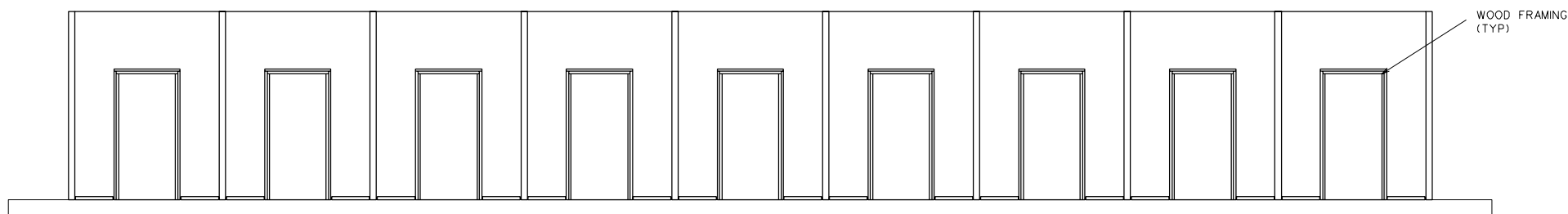
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RANGE AND TRAINING LAND PROGRAM
STANDARD DESIGN MANUAL
FCC• 17904
BREACH FACILITY
STATION 1 - DOOR BREACH

Sheet
reference
number:
BCH-02

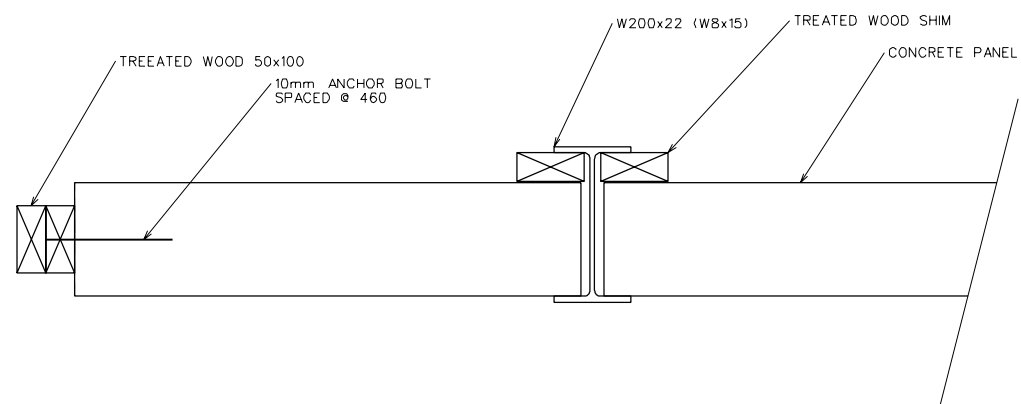


DOOR BREACH - PLAN VIEW

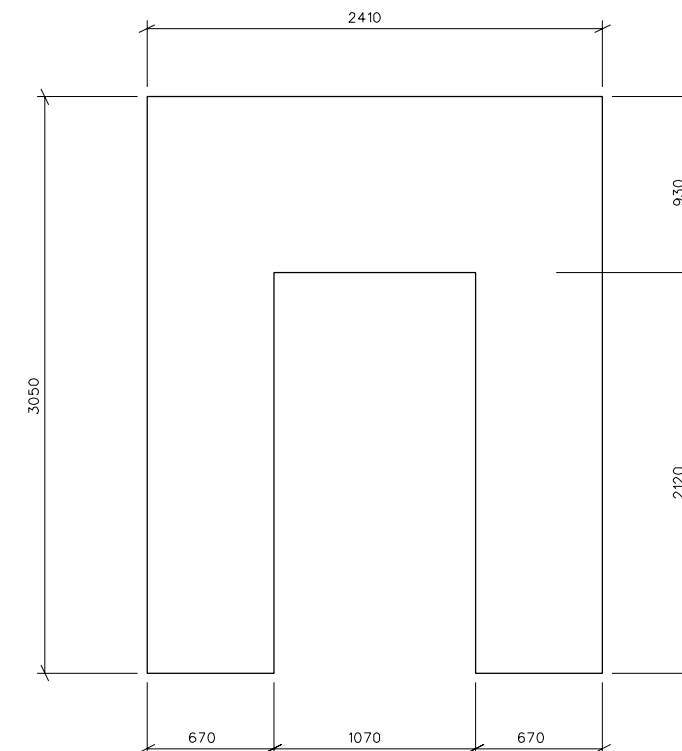


DOOR BREACH - ELEVATION

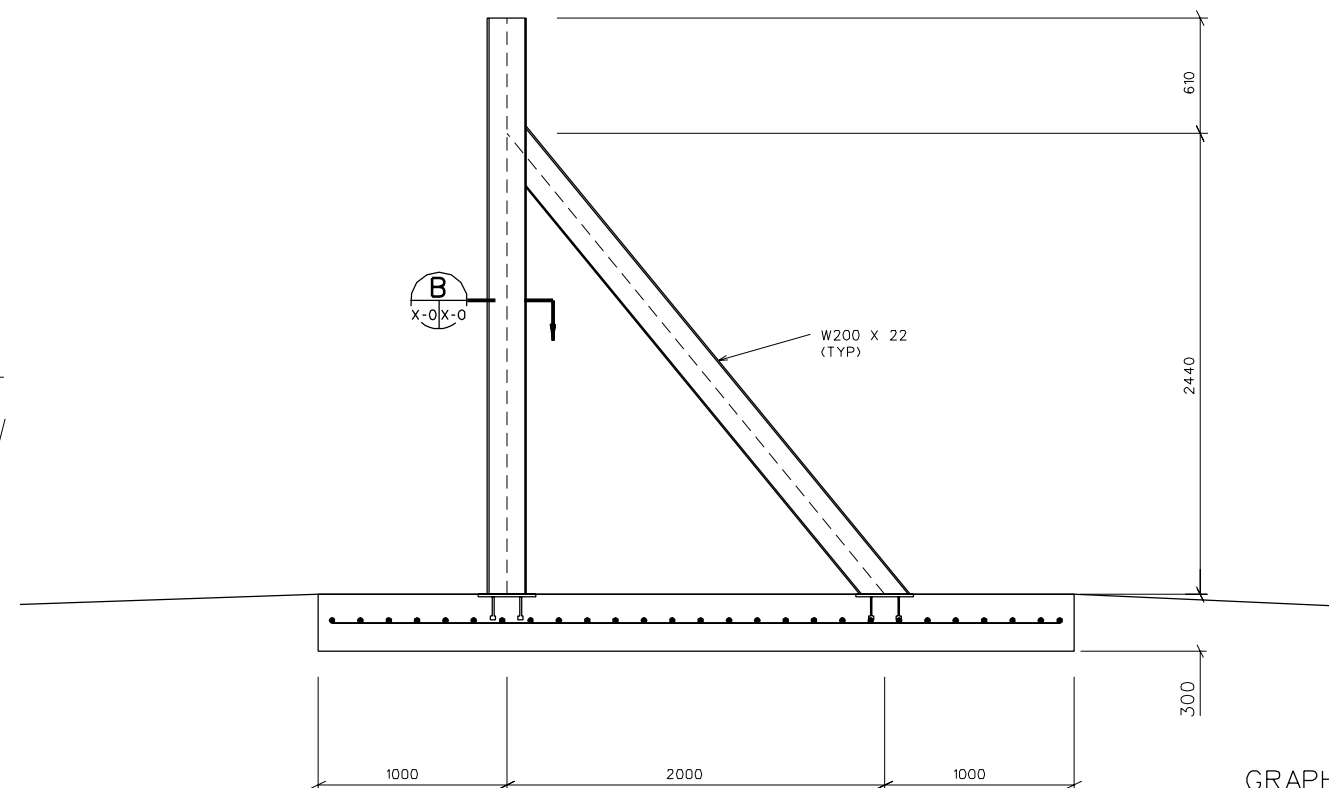
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SECTION B
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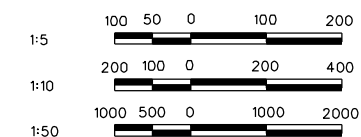


CONCRETE PANEL
SCALE : 1:20



SECTION A
SCALE : 1:20

GRAPHIC SCALES

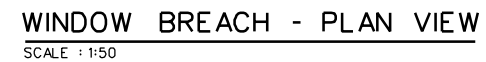


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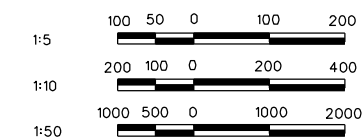
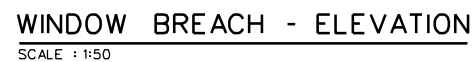
U. S. ARMY ENGINEERING AND SUPPORT CENTER, HUNTSVILLE HUNTSVILLE, ALABAMA	Designed by:		Date:	Rev.
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RANGE AND TRAINING LAND PROGRAM
STANDARD DESIGN MANUAL
FCC• 17904
BREACH FACILITY
STATION 1 - WINDOW BREACH

Sheet
reference
number:
BCH-03



CONCRETE PANEL
SCALE : 1:20

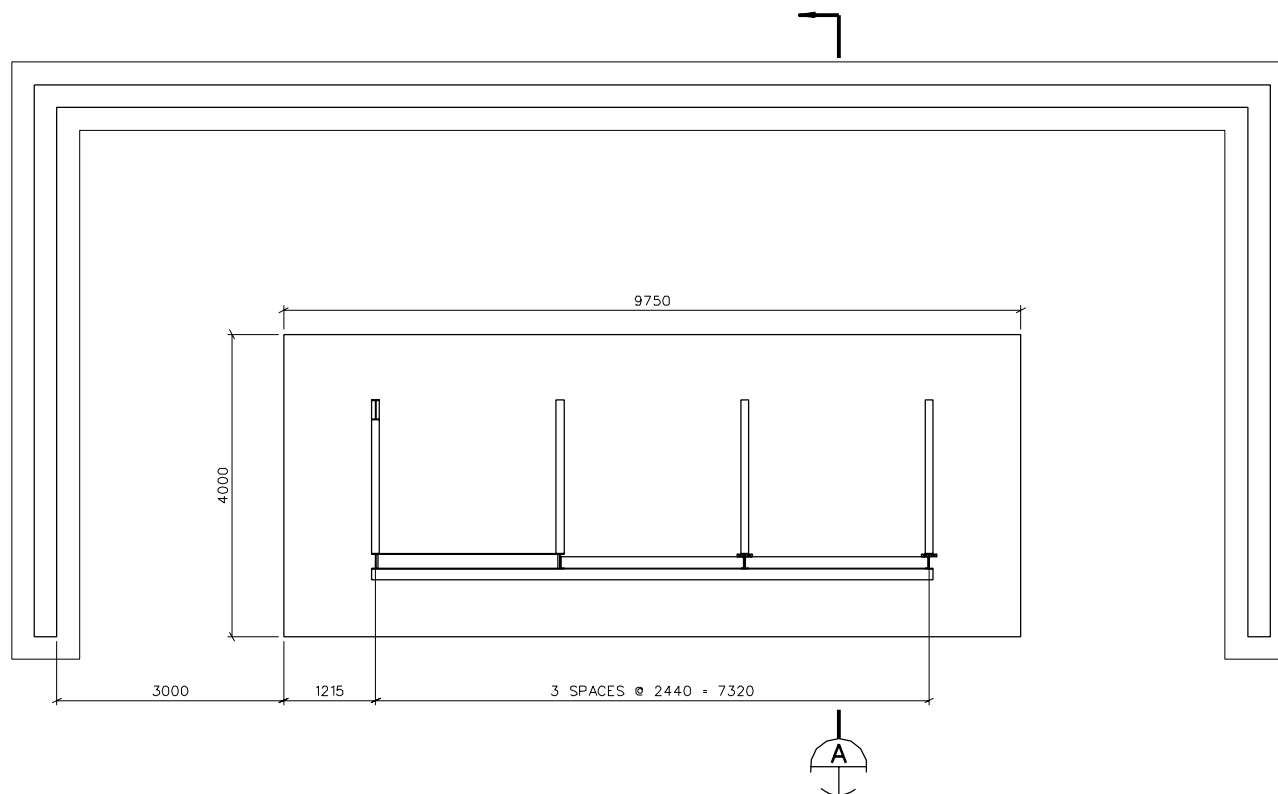


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RANGE AND TRAINING LAND PROGRAM
STANDARD DESIGN MANUAL
FCC • 17904
BREACH FACILITY
STATION 1 - DOOR BREACH

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BCH-04



DOOR BREACH - PLAN VIEW

SCALE : 1:50

